MTNC030621A1
B19 Canada:B05

Color Television

Simplified

CT-32HC43G / CT-32HC43UG / CT-36HC43G / CT-36HC43UG

DX4

Please file and use this manual together with the main service manual for Model CT-36HX43G, order No. MTNC030620C1. Models included in this simplified service manual are similar to

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1. Safety precautions

General guidelines

An isolation transformer should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injuryfrom electrical shocks. It will also protect the receiver from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always replace protective devices, such as fish paper, isolation resistors and capacitors, and shields after servicing the receiver. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.

High potentials are present when this receiver is operating. Operation of the receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautionswhen servicing high voltage equipment.

Extreme care should be practiced when handling the picture tube. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, usesafety goggles and heavy gloves for protection. Discharge the picture tube by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a wellinsulated wire or use a grounding probe.Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to x ray radiation.

The test picture tube used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against x ray radiation as well as implosion. The magnetic shieldlimits the x ray radiation

around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling 50kV without causing x ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. Do not use a line isolation transformer when testing.

Leakage current cold check

Unplug the A.C. cord and connect a jumper between the two plug prongs.Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed metallic part has a returnpath to the chassis, the reading should be between 240kΩ and 5.2MΩ . If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

Leakage current hot check

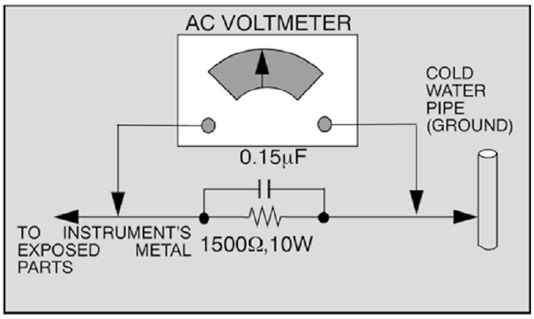
Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15 μ F capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts. Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson model 229, Sencore model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. Ifany measurement is out of the specified limits, there is a possibility of a shock hazard and the receiver must be repaired and rechecked before it is returned to the customer.

Hot check circuit



Insulation test

Connect an insulation tester between an exposed metallic part and A.C. line. Apply 1500VAC/ 60Hz for 1 second. Confirm that the current measurement is 0.5mA ~ 2.0mA. Repeat test with other metallic exposed parts.

X ray radiation

WARNING

The potential source of x ray radiation in the TV set is in the high voltage section and the picture tube.

NOTE

It is important to use an accurate, calibrated high voltage meter.

Set the brightness, picture, sharpness and color controls to minimum.
Measure the high voltage. With a 480i signal the high voltage should be 33.0 ± 1.0kV and with a 1080i signal the high voltage should be 33.0 (+ 1.0kV, - 2.0kV). If the upper limit is out of tolerance, immediate service and correctionis required to insure safe operation and to prevent the possibility of premature component failure.

Horizontal oscillator disable circuit test

This test must be performed as a final check before the receiver is returned to the customer. See horizontal oscillator disable circuit procedure check in this manual.

2. Service notes

NOTE

These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

Leadless chip component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board,however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.
Chip resistor have a three digit numerical resistance code, 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6k Ω resistor, 0 = 0 Ω (jumper).
Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.
Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.
Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

Component removal

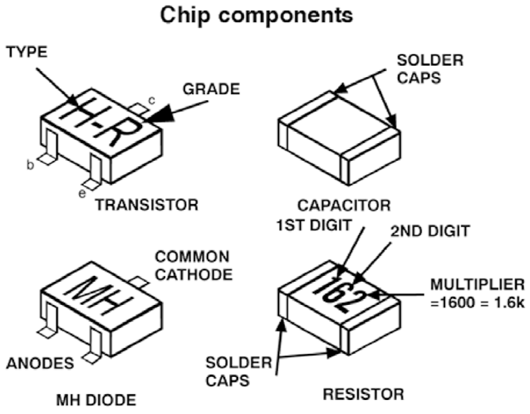
1. Use solder wick to remove solder from component end caps or

terminal.

2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

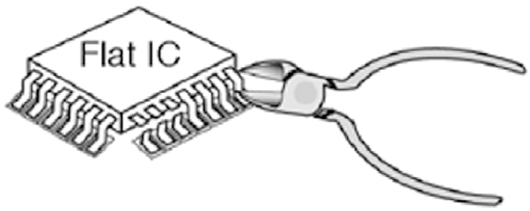
Chip component installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.

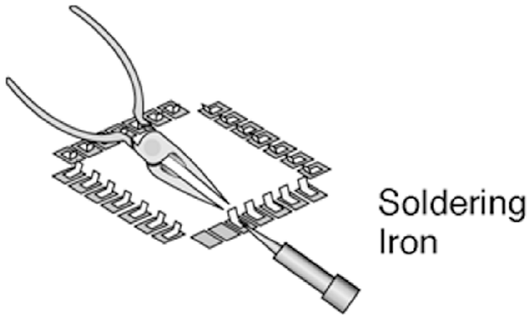

Chip components
TYPE
GRADE
H-R
c
b
e
TRANSISTOR
SOLDER
CAPS
CAPACITOR
1ST DIGIT
2ND DIGIT
MULTIPLIER
=1600 = 1.6k
162
COMMON
CATHODE
MH
ANODES
MH DIODE
SOLDER
CAPS
RESISTOR

How to replace flat ic (required tools)

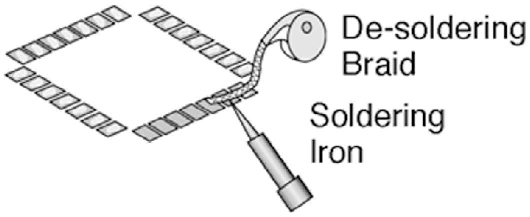
1. Remove the solder from all of the pins of a Flat IC by using a desolder braid



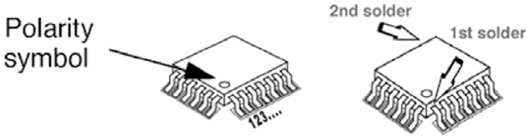
2. Put the iron wire under the pins of the Flat IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.


Soldering
Iron

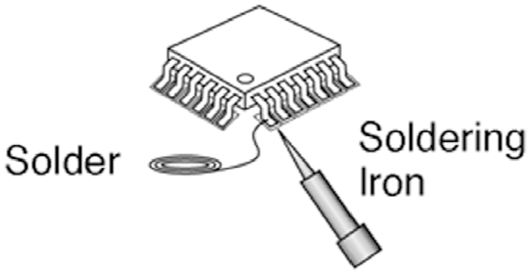
3. Remove the solder from all the pads of the Flat IC by using a de solder braid


De-soldering
Braid
Soldering
Iron

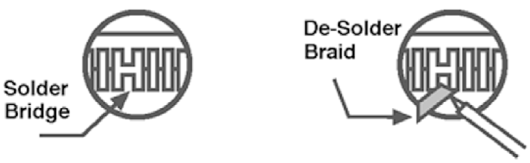
4. Position the new Flat IC in place (apply the pins of the Flat IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol


Polarity
symbol
123....
2nd solder
1st solder

5. Solder all pins to the soldering pads using a fine tipped soldering iron


Solder
Soldering
Iron

6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de solder braid as shown in the figure below


Solder
Bridge
De-Solder
Braid

IMPORTANT

To protect against possible damage to the solid state devices due to arching or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

CAUTION

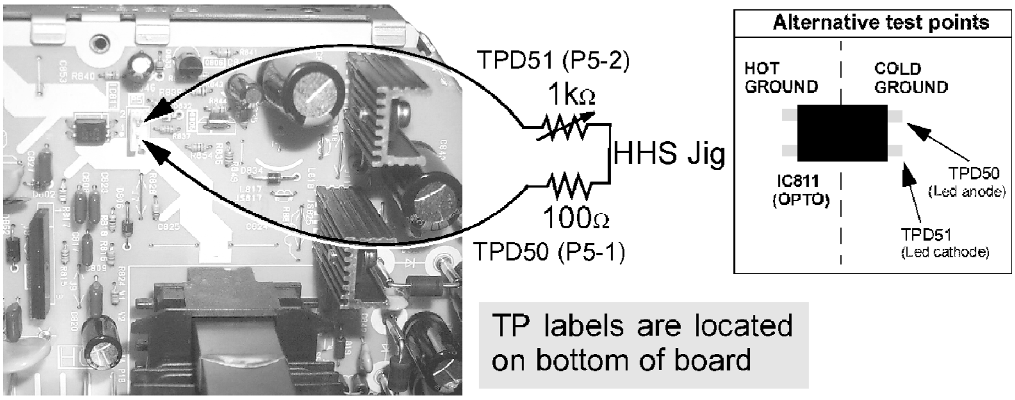
The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground(hot) or (cold) when servicing, or incorrect voltages will be measured.

WARNING

This receiver has been designed to meet or exceed applicable safety and x-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to x-ray radiation and shock and fire hazard, parts indicated with the symbol on the schematic must be replaced with identical parts. Order parts from the manufacturer's partscenter using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.



TP labels are located on bottom of board

HORIZONTAL OSCILLATOR DISABLE CIRCUIT

This chassis employs a special circuit to protect against excessive high voltage and beam current. If, for any reason, the high voltage and beam current exceed a predetermined level this protective circuit activates and detunes the horizontal oscillatorthat limits the high voltage. The over-voltage protection circuit is not adjustable. However, if components indicated by the symbol on the schematic in either the horizontal sweep system or the over-voltage protection

circuit itself are changed, theoperation of the circuit should be checked using the following procedure:

Equipment needed to check the disabled circuit:

1. **High voltage meter (0 ~ 50kV)**
2. **Variac or isolation transformer**
3. **1k ohm VR**
4. **D.C. ammeter**

PREPARATION

1. **Connect receiver to A.C. 120 Volts. Do not turn ON.**
2. **Connect HIGH VOLTAGE meter to 2nd anode (H.V. button).**

NOTE
Use cold ground for negative lead.

3. **Connect the ammeter serial from the flyback anode lead to the picture tube anode socket.**
4. **Prepare HHS jig to be connected between TPD50 and TPD51 on P-Board as shown above.**

PROCEDURE

1. **Open connector A17.**
2. **Turn power ON and apply a white pattern.**
3. **Set current within 50-100 μ A by changing the picture and bright controls.**
4. **Turn power OFF.**
5. **Connect HHS jig between TPD50 and TPD51 on P-Board as shown above (VR should be turn fully clockwise).**
6. **Turn power on.**
7. **Using the variable resistor slowly increase the current until the horizontal sync frequency abruptly increases indicating that the horizontal frequency is just beginning to pull out of sync. Maintain**

the current within 50-100 μ A bychanging the picture and bright controls

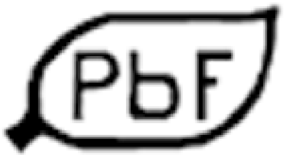
8. **Observe the high voltage meter. High voltage should read less than 38.4kV.**
9. **Turn power OFF, remove HHS jig, HV meter, ammeter and connect A17 connector.**
10. **Turn power ON. Reset PICTURE and BRIGHTNESS controls. Confirm B+ 144V±1.5V with 120V AC applied.**

NOTE
If high voltage is not within the specified limit the cause must be determined before the receiver is returned to the owner.

3. About lead free solder (PbF)

NOTE
Lead is listed as (Pb) in the periodic table of elements. / In the information below, Pb will refer to lead solder, and PbF will refer to Lead Free Solder. / The lead free solder used in our manufacturing process and discussed below is (Sn+Ag+Cu). / Thatis Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For / service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be / used. / PCBs manufacturedusing lead free solder will have the "PbF" or a leaf symbol stamped on the / back of PCB.

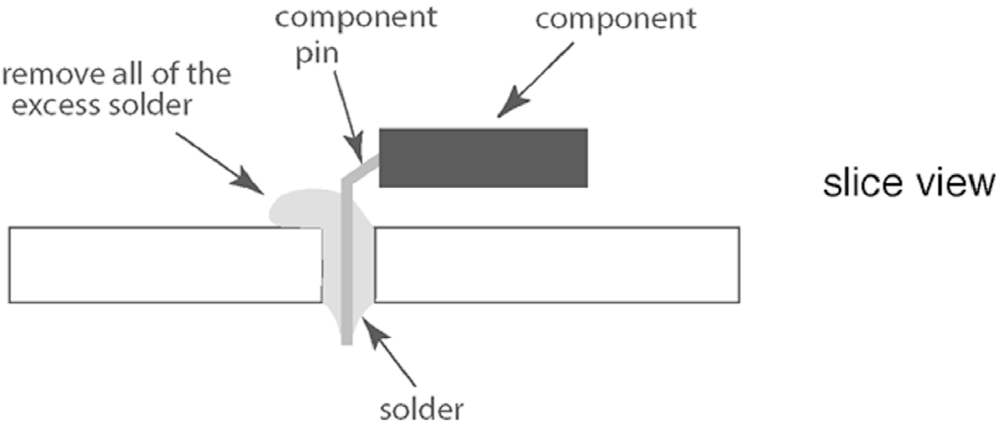


CAUTION

- **Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).**
- **Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). / If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before**

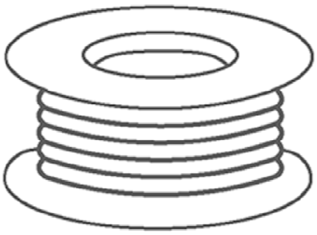
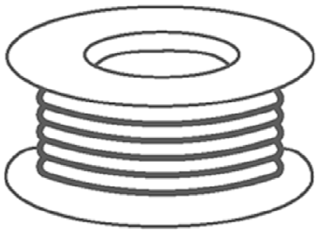
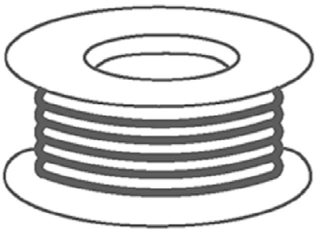
applying Pb solder. If thisis not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.

- **After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side.**


component
pin
component
remove all of the
excess solder
slice view
solder

Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also beused.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

4. Receiver feature table

FEATURE/MODEL	CT-36HC43G/UG	CT-32HC43G/UG
CHASSIS	BP410	BP409
MICRO	256K	
MENU LANGUAGE	ENG/SPAN/FR	
CLOSE CAPTION	X	
V-CHIP (USA/CANADA	X	
CHANNEL INFO BANNER	X	
VIDEO INPUT SKIP	SKIP	
CHANNEL COUNT	181	
PIP (1T), 2T PIP (2T), 2T SPLIT	2T SPLIT	
2RF	X	
REMOTE CONTROL (W/LIGHT)	EUR7613Z80	
CRT SUPPLIER	FLAT 4:3, MDDA	
FAMILY	DX4	
COMB FILTER	MOTION ADP, 3D Y/C	
HEC/VEC (X=BOTH)	X	
VM	X (DIGITAL)	
V/A NORM (X=BOTH)	X	
COLOR TEMP	X	
AIP	X	
PRESET/INPUT LABELING	X	
VIDEO PICTURE MEMORY	X	
DIGITAL SCAN RATE	1080i, 480p	
NTSC LINE DOUBLER	480p PROGRESSIVE	
MTS/SAP/DBX	X	
BUILT-IN AUDIO POWER	10Wx2	
No. OF SPEAKERS	2	
BASS/BALANCE/TREBLE CONTROL	X	
AI SOUND	X	
SURROUND	X	
SPATIALIZER/BBE	BBE	
A/V IN (REAR/FRONT)	4(3/1)	
A/V PROGRAM OUT	X	
AUDIO OUT (FAO: F, VAO:V)	F, V	
COMPONENT INPUT (Y, Pb, Pr)	2	
S-VHS INPUT (REAR/FRONT)	3(2/1)	
WEIGHT (KG/LB)	98KG/216LB	85.2KG/187.8LB
DIMENSIONS (W/D/H) mm	1049.5/742/895	894/685/809

Note:
Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.

5. Board description table

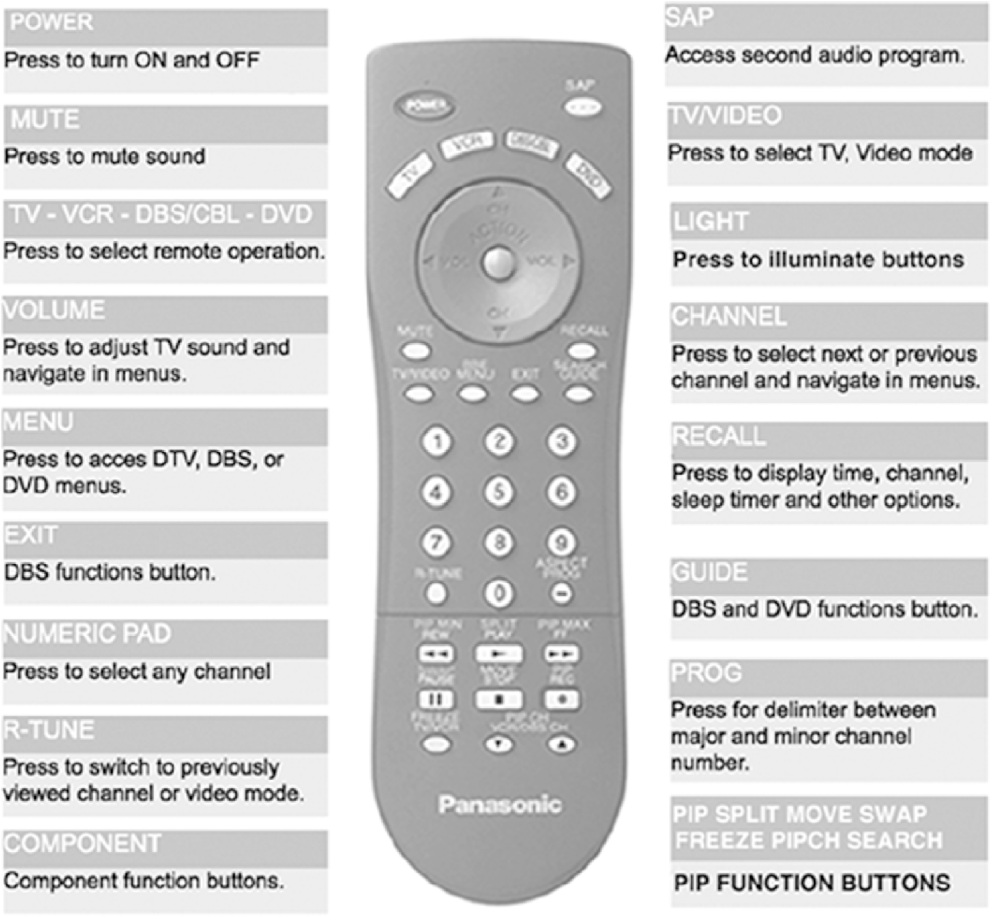
BOARD	CT-36HC43/UG, CT-32HC43/UG	DESCRIPTION
A-BOARD	TNP2AH050AB	MAIN CHASSIS
D-BOARD	TNPH0466AE	DEFLECTION
DG-BOARD	TNP2AA126AC	PIP PROCESSING, SPLIT, SEARCH, FORMATS
P-BOARD	TNP2AA148	POWER SUPPLY
H-BOARD	TNP2AA127	REAR A/V JACKS
L-BOARD	TNP2AA139	CRT BOARD
G-BOARD	TNP2AA141AA	FRONT A/V BOARD

NOTE
When ordering a replacement board assembly, append an “S” to the board number

EXAMPLE
To order the A Board, the replacement board is TNP2AH050ABS

NOTE:
The DG-Board is non-serviceable boards. If this board is defective, replace it with a new one.

6. Location of controls (EUR7613Z80 remote)



POWER
Press to turn ON and OFF

MUTE
Press to mute sound

TV - VCR - DBS/CBL - DVD
Press to select remote operation.

VOLUME
Press to adjust TV sound and navigate in menus.

MENU
Press to acces DTV, DBS, or DVD menus.

EXIT
DBS functions button.

NUMERIC PAD
Press to select any channel

R-TUNE
Press to switch to previously viewed channel or video mode.

COMPONENT
Component function buttons.

SAP
Access second audio program.

TV/VIDEO
Press to select TV, Video mode

LIGHT
Press to illuminate buttons

CHANNEL
Press to select next or previous channel and navigate in menus.

RECALL
Press to display time, channel, sleep timer and other options.

GUIDE
DBS and DVD functions button.

PROG
Press for delimiter between major and minor channel number.

PIP SPLIT MOVE SWAP FREEZE PIPCH SEARCH
PIP FUNCTION BUTTONS

Note:
For additional information about this remote please refer to the owner’s manual section remote operation, listed on the parts list section.

7. Block Diagrams

7.1. Audio Block Diagram

7.2. Video Block Diagram

8. Parts list

8.1. Description of abbreviations guide

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

Abbreviation of part name and description

1. Resistor
Example :
ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

Type	Allowance
C : Carbon	F : ± 1%
F : Fuse	G : ± 2%
M : Metal Oxide Metal Film	J : ± 5% K : ± 10%
S : Solid	M : ± 20%
W : Wire Wound	

2. Capacitor
Example :
ECKF1H103ZF **C** 0.01µF, **Z**, 50V
Type Allowance

Type	Allowance
C : Carbon	C : ± 0.25pF
E : Electrolytic	D : ± 0.5pF
P : Polyester Polypropylene	F : ± 1pF G : ± 3%
T : Tantalum	J : ± 5%
	K : ± 10%
	L : ± 15%
	M : ± 20%
	P : ± 100%, -0%
	Z : ± 80%, -20%

8.2. Differences Parts list

NOTE:
Please ADD the following differences parts lists to main manual for CT-32HXC43G with order No. MTNC030620C1

8.2.1. CT-32HC43G from CT-32HXC43G

Ref. No.	Part No.	Part Name & Description
		OTHERS
M001	TXFBX16BSER	ASSY, POWER BUTTON
M002	TXFKU07GSER	ASSY, CABINET BACK
M003	TXFKP05GSER	ASSY, FRONT PANELS
M004	TXFKY14FSER	ASSY, CABINET FRONT
M005	TKP2AA0402S	FRONT DOOR
		ACCESORIES
M006	EUR7613Z80	REMOTE CONTROL
M007	UR76EC0303D	BATTERY COVER REMOTE CONTROL

8.2.2. CT-36HC43G from CT-32HXC43G

Ref. No.	Part No.	Part Name & Description
DIODES		
D3035	MAZ31100ML	DIODE
D3036	MAZ31100ML	DIODE
D3037	MAZ31100ML	DIODE
D3038	MAZ31100ML	DIODE
D3039	MAZ31100ML	DIODE
OTHERS		
M001	A90LSW295X	CRT 36”
M002	TXFKY26ESER	ASSY, CABINET FRONT
M003	TXFKU04FSER	ASSY, CABINET BACK
M004	TXFKP01FSER	ASSY, FRONT PANEL
M005	TKP2AA0402S	FRONT DOOR
DEG	TSP2AA015A	DEGAUSS COIL
DY	KDY45HE59F	DEFLECTION YOKE
ACCESORIES		
M010	EUR7613Z80	REMOTE CONTROL
M011	UR76EC0303D	BATTERY COVER REMOTE CONTROL

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Service Manual

Color Television

CT-36HL43G / CT-36HL43UG / CT-32HL43G / CT-32HL43UG / CT-32HXC43G / CT-32HXC43UG

DX4

Panasonic®

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Extreme care should be practiced when handling the picture tube. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, usesafety goggles and heavy gloves for protection. Discharge the picture tube by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a wellinsulated wire or use a grounding probe.Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to x ray radiation.

The test picture tube used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against x ray radiation as well as implosion. The magnetic shieldlimits the x ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling 50kV without causing x ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. Do not use a line isolation transformer when testing.

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Leakage current hot check

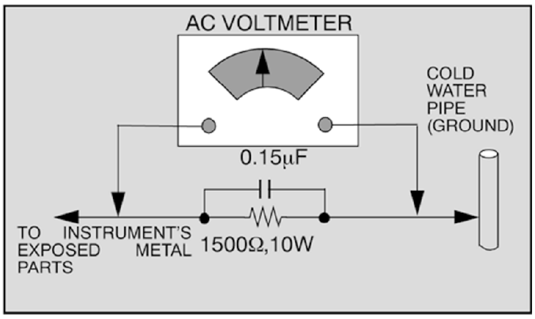
Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check. Connect a 1.5k Ω 10 watt resistor in parallel with a 0.15 μ F capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts. Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson model 229, Sencore model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. Ifany measurement is out of the specified limits, there is a possibility of a shock hazard and the receiver must be repaired and

rechecked before it is returned to the customer.

Hot check circuit



Insulation test

Connect an insulation tester between an exposed metallic part and A.C. line. Apply 1500VAC/60Hz for 1 second. Confirm that the current measurement is 0.5mA ~ 2.0mA. Repeat test with other metallic exposed parts.

X ray radiation

WARNING
The potential source of x ray radiation in the TV set is in the high voltage section and the picture tube.

NOTE
It is important to use an accurate, calibrated high voltage meter.

Set the brightness, picture, sharpness and color controls to minimum.
Measure the high voltage. With a 480i signal the high voltage should be 33.0 ± 1.0kV and with a 1080i signal the high voltage should be 33.0 (+ 1.0kV, - 2.0kV). If the upper limit is out of tolerance, immediate service and correctionis required to insure safe operation and to prevent the possibility of premature component failure.

Horizontal oscillator disable circuit test

This test must be performed as a final check before the receiver is returned to the customer. See horizontal oscillator disable circuit procedure check in this manual.

2. Service notes

NOTE
These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

Leadless chip component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board,however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor have a three digit numerical resistance code, 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6k Ω resistor, 0 = 0 Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

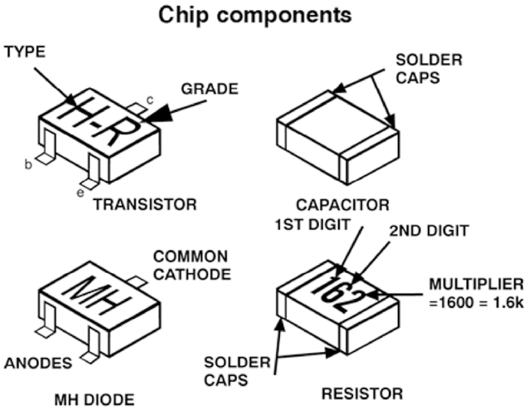
Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

Component removal

1. **Use solder wick to remove solder from component end caps or terminal.**
2. **Without pulling up, carefully twist the component with tweezers to break the adhesive.**
3. **Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.**

Chip component installation

1. **Put a small amount of solder on the board soldering pads.**
2. **Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.**

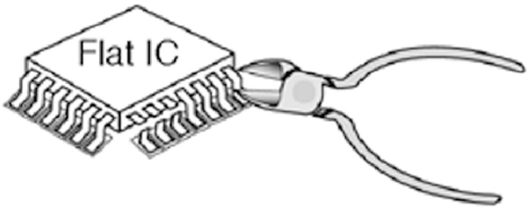


Chip components

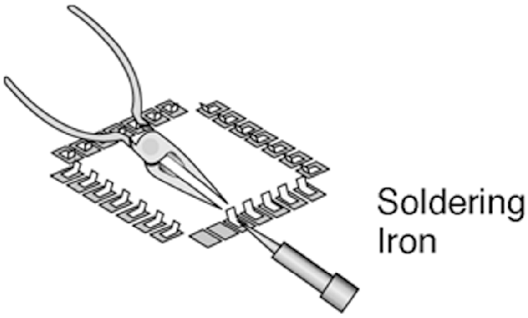
TYPE
GRADE
H-R
c
b
e
TRANSISTOR
SOLDER
CAPS
CAPACITOR
1ST DIGIT
2ND DIGIT
162
MULTIPLIER
=1600 = 1.6k
SOLDER
CAPS
RESISTOR
COMMON
CATHODE
MH
ANODES
MH DIODE

How to replace flat ic (required tools)

1. **Remove the solder from all of the pins of a Flat IC by using a desolder braid**

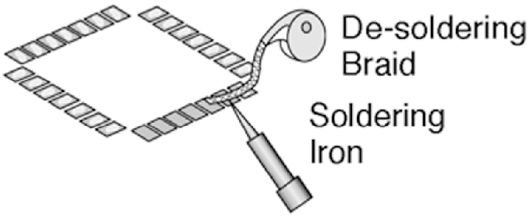


2. **Put the iron wire under the pins of the Flat IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.**



Soldering
Iron

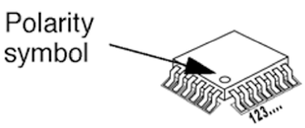
3. **Remove the solder from all the pads of the Flat IC by using a de solder braid**

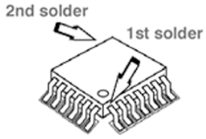


De-soldering
Braid
Soldering
Iron

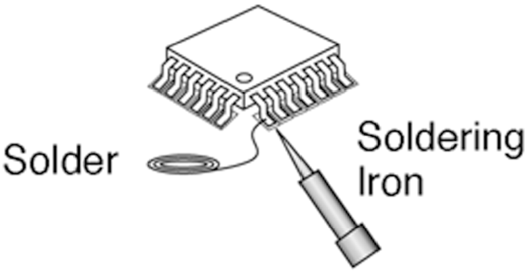
4. **Position the new Flat IC in place (apply the pins of the Flat IC to**

the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol

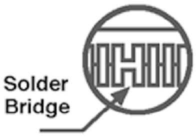


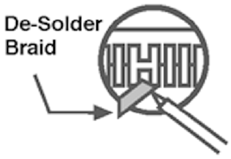


5. **Solder all pins to the soldering pads using a fine tipped soldering iron**



6. **Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de solder braid as shown in the figure below**





IMPORTANT

To protect against possible damage to the solid state devices due to arching or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

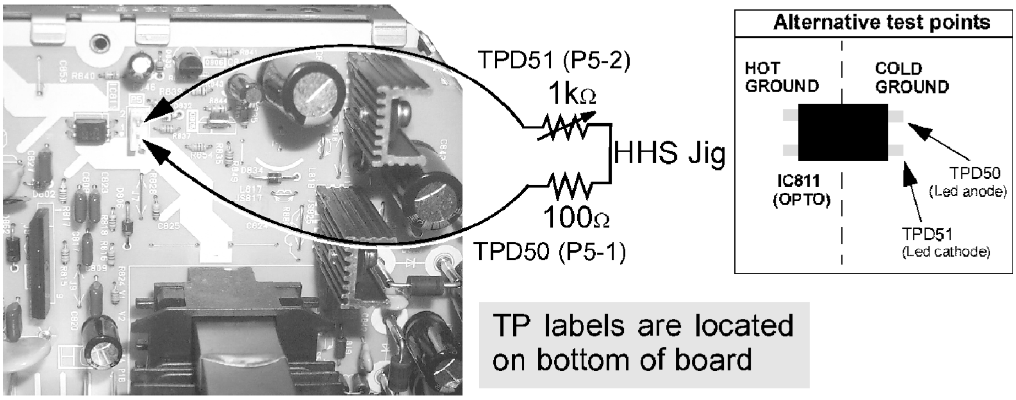
CAUTION

The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground(hot) or (cold) when servicing, or incorrect voltages will be measured.

WARNING

This receiver has been designed to meet or exceed applicable safety and x-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to x-ray radiation and shock and fire hazard, parts indicated with the symbol on the schematic must be replaced with identical parts. Order parts from the manufacturer’s partscenter using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.
For optimum performance and reliability, all other parts should be replaced with components of identical specification.



TP labels are located on bottom of board

HORIZONTAL OSCILLATOR DISABLE CIRCUIT

This chassis employs a special circuit to protect against excessive high voltage and beam current. If, for any reason, the high voltage and beam current exceed a predetermined level this protective circuit activates and detunes the horizontal oscillatorthat limits the high voltage. The over-voltage protection circuit is not adjustable. However, if components indicated by the symbol on the schematic in either the horizontal sweep system or the over-voltage protection circuit itself are changed, theoperation of the circuit should be checked using the following procedure:

Equipment needed to check the disabled circuit:

1. **High voltage meter (0 ~ 50kV)**
2. **Variac or isolation transformer**
3. **1k ohm VR**
4. **D.C. ammeter**

PREPARATION

1. **Connect receiver to A.C. 120 Volts. Do not turn ON.**
2. **Connect HIGH VOLTAGE meter to 2nd anode (H.V. button).**

NOTE

Use cold ground for negative lead.

3. Connect the ammeter serial from the flyback anode lead to the picture tube anode socket.
4. Prepare HHS jig to be connected between TPD50 and TPD51 on P-Board as shown above.

PROCEDURE

1. Open connector A17.
2. Turn power ON and apply a white pattern.
3. Set current within 50-100 μ A by changing the picture and bright controls.
4. Turn power OFF.
5. Connect HHS jig between TPD50 and TPD51 on P-Board as shown above (VR should be turn fully clockwise).
6. Turn power on.
7. Using the variable resistor slowly increase the current until the horizontal sync frequency abruptly increases indicating that the horizontal frequency is just beginning to pull out of sync. Maintain the current within 50-100 μ A bychanging the picture and bright controls
8. Observe the high voltage meter. High voltage should read less than 38.4kV.
9. Turn power OFF, remove HHS jig, HV meter, ammeter and connect A17 connector.
10. Turn power ON. Reset PICTURE and BRIGHTNESS controls. Confirm B+ 144V±1.5V with 120V AC applied.

NOTE

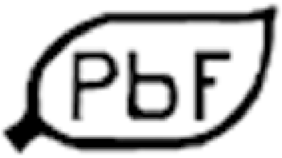
If high voltage is not within the specified limit the cause must be determined before the receiver is returned to the owner.

3. About lead free solder (PbF)

NOTE

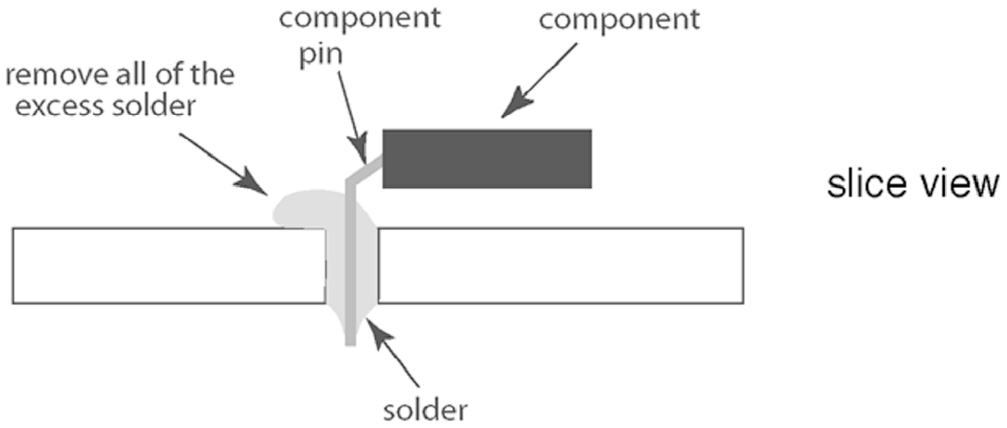
Lead is listed as (Pb) in the periodic table of elements. / In the information below, Pb will refer to lead solder, and PbF will refer to Lead Free Solder. / The lead free solder used in our manufacturing process and discussed below is (Sn+Ag+Cu). / Thatis Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it’s manufacture due to environmental conservation issues. For / service and repair work, we’d suggest the use of Pb free solder as well, although Pb solder may be / used. / PCBs manufacturedusing lead free solder will have the “PbF” or a leaf symbol stamped on the / back of PCB.



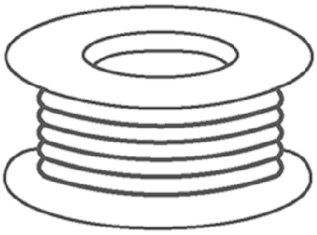
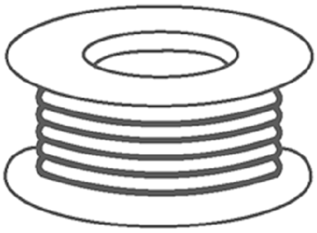
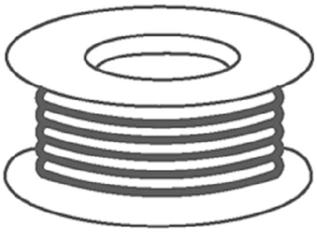
CAUTION

- **Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).**
- **Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). / If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If thisis not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.**
- **After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side.**


component
pin
component
remove all of the
excess solder
slice view
solder

Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also beused.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

4. Receiver feature table

FEATURE/MODEL	CT-36HL43G/UG	CT-32HL43G/UG
CHASSIS	AP410	AP409
MICRO	256K	
MENU LANGUAGE	ENG/SPAN/FR	
CLOSE CAPTION	X	
V-CHIP (USA/CANADA	X	
CHANNEL INFO BANNER	X	
VIDEO INPUT SKIP	SKIP	
CHANNEL COUNT	181	
PIP (1T), 2T PIP (2T), 2T SPLIT	2T SPLIT	
2RF	X	
REMOTE CONTROL (W/LIGHT)	EUR7603Z90	
CRT SUPPLIER	FLAT 4:3, MDDA	
FAMILY	DX4	
COMB FILTER	MOTION ADP, 3D Y/C	
HEC/VEC (X=BOTH)	X	
VM	X (DIGITAL)	
V/A NORM (X=BOTH)	X	
COLOR TEMP	X	
AIP	X	
PRESET/INPUT LABELING	X	
VIDEO PICTURE MEMORY	X	
DIGITAL SCAN RATE	1080i, 480p	
NTSC LINE DOUBLER	480p PROGRESSIVE	
MTS/SAP/DBX	X	
BUILT-IN AUDIO POWER	30W	
No. OF SPEAKERS	2 + SUBWOOFER	
BASS/BALANCE/TREBLE CONTROL	X	
AI SOUND	X	
SURROUND	X	
SPATIALIZER/BBE	BBE/VIVA	
A/V IN (REAR/FRONT)	4(3/1)	
A/V PROGRAM OUT	X	
AUDIO OUT (FAO: F, VAO:V)	F, V	
COMPONENT INPUT (Y, Pb, Pr)	2	
S-VHS INPUT (REAR/FRONT)	3(2/1)	
DVI/HDCP INPUT	1	
WEIGHT (KG/LB)	98KG/216LB	85.2KG/187.8LB
DIMENSIONS (W/D/H) mm	1049.5/742/895	894/685/809

Note:
Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.

FEATURE/MODEL	CT-32HXC43G/UG
CHASSIS	BP409
MICRO	256K
MENU LANGUAGE	ENG/SPAN/FR
CLOSE CAPTION	X
V-CHIP (USA/CANADA	X
CHANNEL INFO BANNER	X
VIDEO INPUT SKIP	SKIP
CHANNEL COUNT	181
PIP (1T), 2T PIP (2T), 2T SPLIT	2T
2RF	X
REMOTE CONTROL (W/LIGHT)	EUR7603Z40 (GREY)
CRT SUPPLIER	FLAT 4:3, MDDA
FAMILY	DX4
COMB FILTER	3 LINE
HEC/VEC (X=BOTH)	X
VM	X (DIGITAL)
V/A NORM (X=BOTH)	X
COLOR TEMP	X
AIP	X
PRESET/INPUT LABELING	X
VIDEO PICTURE MEMORY	X
DIGITAL SCAN RATE	1080i, 480p
NTSC LINE DOUBLER	480p PROGRESSIVE
MTS/SAP/DBX	X
BUILT-IN AUDIO POWER	10Wx2
No. OF SPEAKERS	2
BASS/BALANCE/TREBLE CONTROL	X
AI SOUND	X
SURROUND	X
SPATIALIZER/BBE	BBE
A/V IN (REAR/FRONT)	4(3/1)
A/V PROGRAM OUT	X
AUDIO OUT (FAO: F, VAO:V)	F, V
COMPONENT INPUT (Y, Pb, Pr)	2
S-VHS INPUT (REAR/FRONT)	3(2/1)
DVI/HDCP INPUT	---
EPJ/HPJ/MISC	HPJ
WEIGHT (KG/LB)	85.2KG/187.8LB
DIMENSIONS (W/D/H) mm	894/685/809

Note:

Specifications are subject to change without notice or obligation. Dimensions and weights are

approximate.

5. Board description table

BOARD	CT-36HL43/UGCT-32HL43G/UG	CT-32HXC43G/UG	DESCRIPTION
A-BOARD	TNP2AH050	TNP2AH050AB	MAIN CHASSIS
D-BOARD	TNPH0466AE	TNPH0466AE	DEFLECTION
DV-BOARD	TNP2AA114	N/A	DVI BOARD
DG-BOARD	TNP2AA126AB	TNP2AA126AB	PIP PROCESSING, SPLIT, SEARCH,
P-BOARD	TNP2AA148	TNP2AA148	POWER SUPPLY
H-BOARD	TNP2AA127	TNP2AA127	REAR A/V JACKS
L-BOARD	TNP2AA139	TNP2AA139	CRT BOARD
K-BOARD	TNP2AA143	N/A	FRONT KEY BOARD
G-BOARD	TNP2AA142	TNP2AA141AA	FRONT A/V BOARD

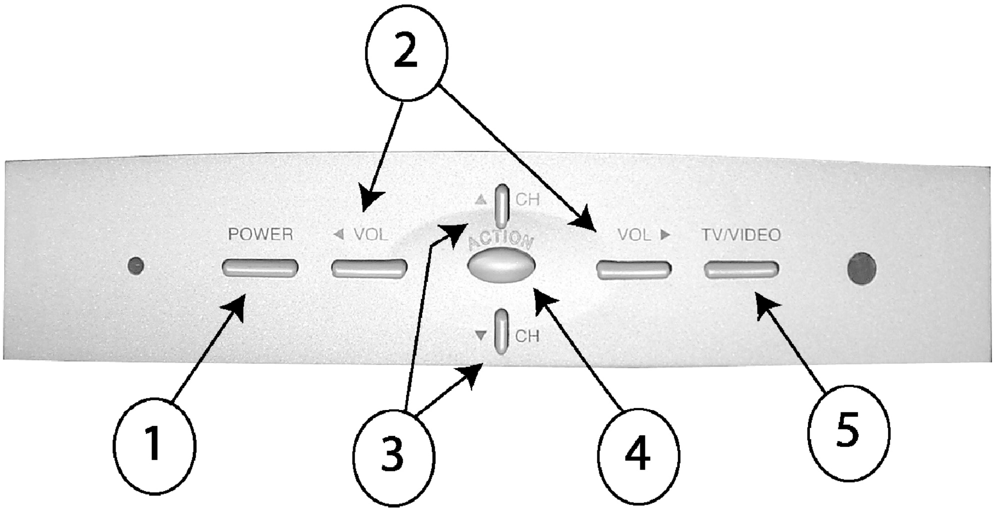
NOTE
When ordering a replacement board assembly, append an “S” to the board number

EXAMPLE
To order the A Board, the replacement board is TNP2AH050S

NOTE:
The DG-Board and DV-Board are non-serviceable boards, except for DV-Board audio connector and DVI conector. If any of these boards or DV-Board components are defective, replace it with a new one and take back the defectiver board to the service center.

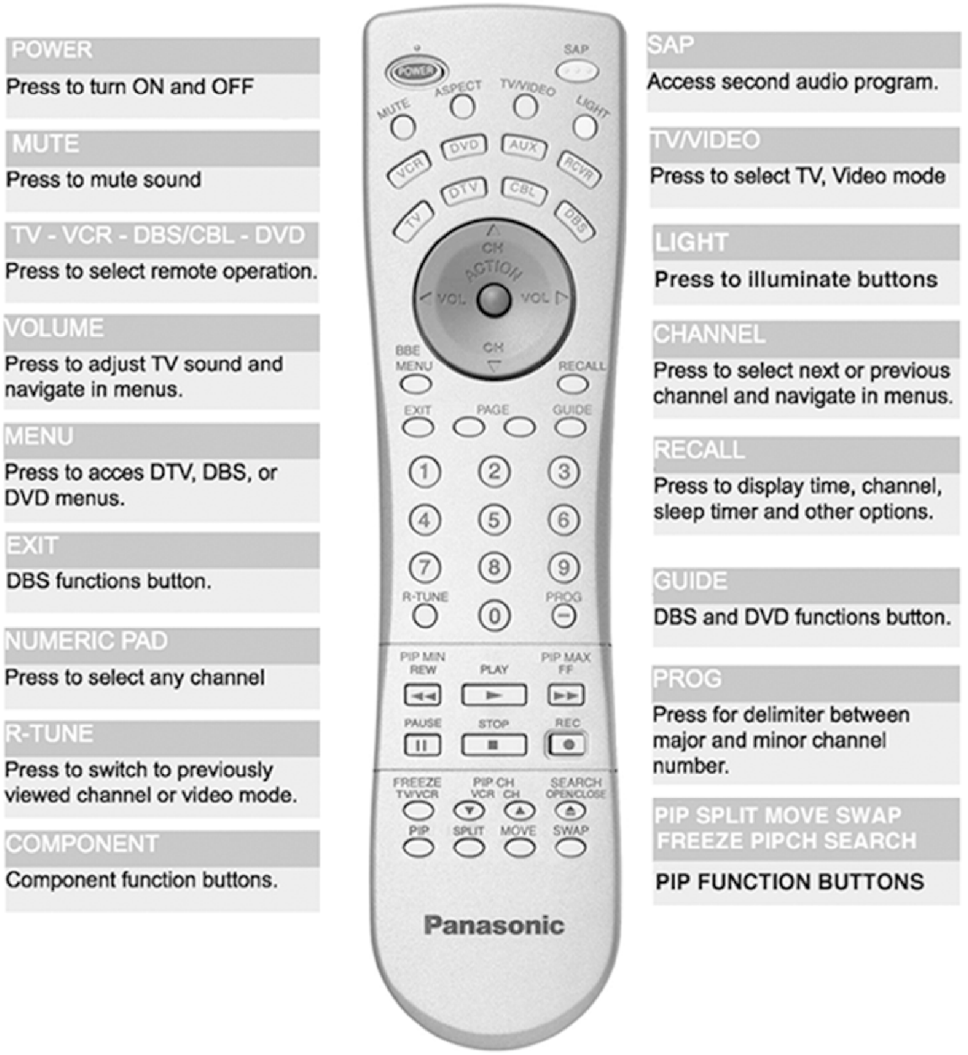
6. TV Location of controls

Panasonic
HDTV


2
POWER
◄ VOL
▲ CH
ACTION
▼ CH
VOL ►
TV/VIDEO
1
3
4
5

Quick reference control operation	
①	**Power** - Press to turn ON or OFF.
②	**Volume** - Press to adjust sound level, or to adjust audio menus, video menus, and select operating features when menus are displayed
③	**Channel** - Press to select programmed channels. Press to highlight desired features when menus are displayed. Also use to select cable converter box channels after programming remote control infra-red codes (the TV/AUX/CABLE switch must be set in CABLE position).
④	**Action** - Press to display main menu and access on screen feature and adjustment menus.
⑤	**TV/Video** - Press to select TV or one of the video inputs, for the main picture or the PIP frame (when PIP frame is displayed).

7. Location of controls (EUR7603Z90 remote)


POWER
SAP
ASPECT
TV/VIDEO
MUTE
LIGHT
DVD
AUX
VCR
RCVR
DTV
CBL
TV
DBS
CH
ACTION
VOL
VOL
CH
BBE
MENU
RECALL
EXIT
PAGE
GUIDE
1
2
3
4
5
6
7
8
9
R-TUNE
0
PROG
PIP MIN
REW
PLAY
PIP MAX
FF
PAUSE
STOP
REC
FREEZE
TV/VCR
PIP CH
VCR CH
SEARCH
OPEN/CLOSE
PIP
SPLIT
MOVE
SWAP
Panasonic

POWER
Press to turn ON and OFF

MUTE
Press to mute sound

TV - VCR - DBS/CBL - DVD
Press to select remote operation.

VOLUME
Press to adjust TV sound and navigate in menus.

MENU
Press to acces DTV, DBS, or DVD menus.

EXIT
DBS functions button.

NUMERIC PAD
Press to select any channel

R-TUNE
Press to switch to previously viewed channel or video mode.

COMPONENT
Component function buttons.

SAP
Access second audio program.

TV/VIDEO
Press to select TV, Video mode

LIGHT
Press to illuminate buttons

CHANNEL
Press to select next or previous channel and navigate in menus.

RECALL
Press to display time, channel, sleep timer and other options.

GUIDE
DBS and DVD functions button.

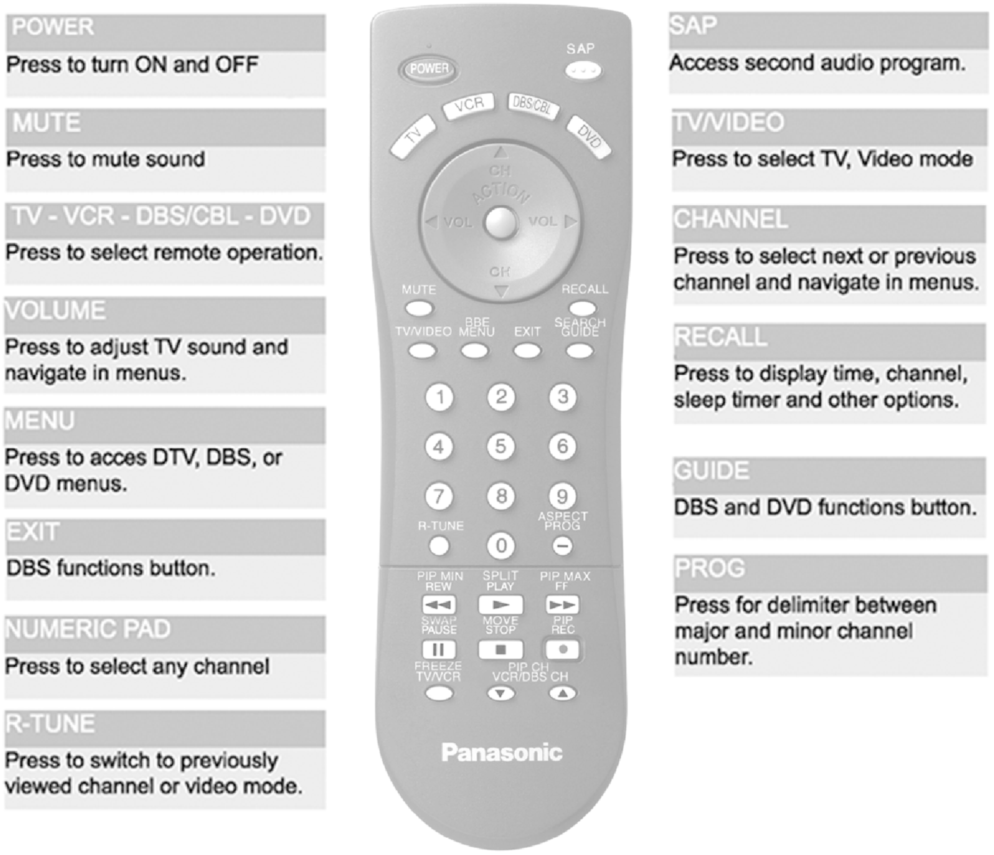
PROG
Press for delimiter between major and minor channel number.

PIP SPLIT MOVE SWAP FREEZE PIPCH SEARCH
PIP FUNCTION BUTTONS

Note:
For additional information about this remote please refer to the owner’s manual section remote

operation, listed on the parts list section.

8. Location of controls (EUR7613Z40 remote)



POWER
Press to turn ON and OFF

MUTE
Press to mute sound

TV - VCR - DBS/CBL - DVD
Press to select remote operation.

VOLUME
Press to adjust TV sound and navigate in menus.

MENU
Press to acces DTV, DBS, or DVD menus.

EXIT
DBS functions button.

NUMERIC PAD
Press to select any channel

R-TUNE
Press to switch to previously viewed channel or video mode.

SAP
Access second audio program.

TV/VIDEO
Press to select TV, Video mode

CHANNEL
Press to select next or previous channel and navigate in menus.

RECALL
Press to display time, channel, sleep timer and other options.

GUIDE
DBS and DVD functions button.

PROG
Press for delimiter between major and minor channel number.

POWER
SAP
TV
VCR
DBS/CBL
DVD
CH
ACTION
VOL
VOL
CH
MUTE
RECALL
TV/VIDEO
BBE MENU
EXIT
SEARCH GUIDE
1
2
3
4
5
6
7
8
9
R-TUNE
0
ASPECT PROG
PIP MIN REW
SPLIT PLAY
PIP MAX FF
SWAP PAUSE
MOVE STOP
PIP REC
FREEZE TV/VCR
PIP CH VCR/DBS CH
Panasonic

Note:
For additional information about this remote please refer to the owner’s manual section remote operation, listed on the parts list section.

9. Auto diagnosis feature

This receiver incorporates a new self diagnosis feature. With this new feature will be easier for the technician to detect the failures. There is a LED located by the keyboard on the front panel, this LED will start flashing when a failure is detectedby the circuits located in specific areas, depending on how many times the LED is flashing, this will tell you what circuit should be checked. Make a count of flashing and see the table shown below. Please use this feature effectively especially forintermittent problems.

SOS of front LED

NUMBER OF FLASHES	POSSIBLE CIRCUIT
1	+140
2	LOW D.C.
4	HHS
5	IC4511
6	IC4518

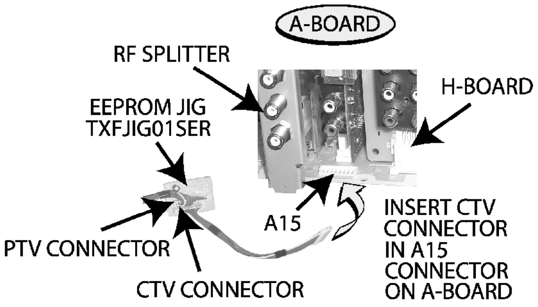
AFTER THE COUNT
Proceed to check that area, verify what board is the problem located, this way the area to check will be reduced until the failure is found.

10. EEPROM copy jig

This CTV has a feature that allows to clone or back-up main EEPROM data adjustments from a CTV to other by connecting a jig to the CTV set. A jig part number TXFJIG01SER, is available through Matsushita/Panasonic Services.

Preparation:
To connect this jig, remove the lower back cover as instructed on disassembly for service section on this service manual and insert the jig into A15 connector located on the A-Board by the RF splitter. (See figure)

EEPROM copy jig connection


A-BOARD
RF SPLITTER
H-BOARD
EEPROM JIG
TXFJIG01SER
A15
INSERT CTV
CONNECTOR
IN A15
CONNECTOR
ON A-BOARD
PTV CONNECTOR
CTV CONNECTOR

Procedure to copy data:

1. **Enter to service mode and display service menu.**
2. **Select “AREA” DAC and then press ACTION button on remote to enter. Press VOL right/left to select one of the following options then press ACTION:**

    - Select ALL to copy all main EEPROM data
    - Select ADJ to copy only adjustment data.
    - Select FIX to copy only fix data

3. **To copy data from main EEPROM to jig, select “IN → EX” DAC and press ACTION button on remote.**

4. To copy data from jig to main EEPROM, select “EX → IN” DAC and press ACTION button on remote.

11. Dissasembly for service

Back cover

Remove all the screws marked with an arrow (←) from the back of the receiver

NOTE

Screw configuration, type, and number of screws vary depending on the model of the receiver serviced and the application; various models are covered in this manual. Use same hardware when reassembling the receiver.

- 4 screws at the top edge of the receiver.
- 4 screw by the A/V jacks.
- 1 screw by the antenna jacks.
- 1 screw at the lower part of TV.
- 1 screw at each lower corner of the receiver.
- 1 screw by the retainer plate of the AC power cord.
- 1 screw by the A.C. cord assembly.

NOTE

Extensions for board connectors may be needed to take voltages on some boards, please see parts list section for part numbers in this service manual.

A-Board - Main chassis

The A-Board assembly rest on a chassis tray along with the D-Board.

Slide chassis tray out. Gently lift the tray and pull out. Disconnect plug connectors; release wire ties and holders as required for complete chassis removal.

1. A-Board is secured to the chassis tray with screws.
2. The A-Board is mated to the D-Board by four flexible connectors: A4, A5, A6 & A7 (D4, D5, D6 & D7 on the D-Board, respectively). To remove either boards, unplug the connectors on the A-Board.

NOTE

Some tie-wraps that secure the wire dressings may need to be unfastened for chassis removal

D-Board - Deflection

The D-Board assembly rest on a chassis tray along with the A-Board.
Slide chassis tray out. Gently lift the tray and pull out. Disconnect plug connectors; release wire ties and holders as required for complete chassis removal.

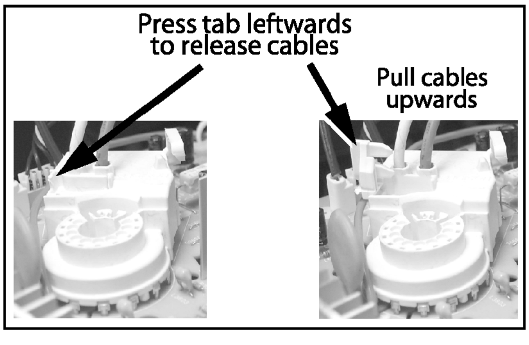
1. **D-Board is secured to the chassis tray with screws.**
2. **The D-Board is mated to the A-Board by four flexible connectors: D4, D5, D6 and D7 (A4, A5, A6 & A7 on the A-Board, respectively). To remove either boards, unplug the connectors on the A-Board.**

NOTE
Some tie-wraps that secure the wire dressings may need to be unfastened for chassis removal

L-Board - CRT output

Plugs into the socket on the CRT neck.
To remove this board, first unplug the board from the CRT neck, then disconnect L1, L2 and L3 connectors, to disconnect the focus F1(red cable) & F2 (white cable) cables from the CRT socker, pull the tab and release the cables (see figure),finally disconnect the screen cable from the D-Board D16 (screen and heater).
To reinsert back the cables, remember the original position of cables, F1 (red cable) goes to A on the CRT socket and F2 (white cable) goes to B on the CRT socket.

F1 and F2 cables release



To release screen GND cables from L-Board L10, L11 & L12 connectors, insert a wire in both sides of connector and pull upwards the cable, then remove the wire.

DG-Board

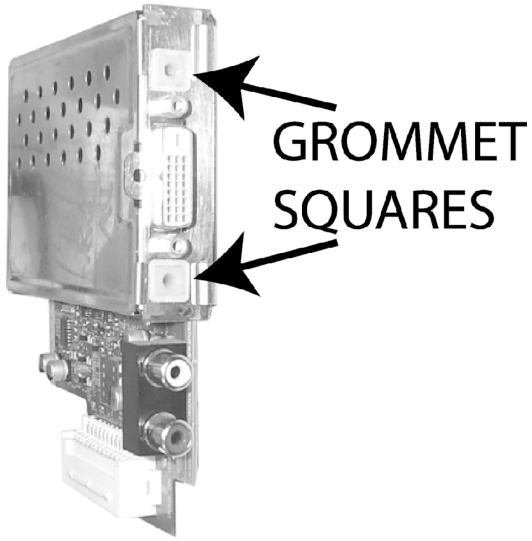
The DG-Board is assembled on the main chassis (A-Board) plugged at the A21, A22 and A23 (DG1, DG2 and DG3 respectively) connectors.

NOTE
This board is not-serviceable. / When removing this board pull carefully.

DV-Board (ONLY FOR HL MODELS)

1. **Plugs onto the A-Board at the A5 (DV1) connectors.**
2. **This board has two Grommet squares, be careful to do not screw too tight, otherwise this grommet screw hole will get stripped.**

Grommet squares on DV-Board



NOTE:
This board is non-serviceable. Except for JK002 (DVI AUDIO CONNECTOR) and JK002 (DVI CONNECTOR) / When removing this board pull carefully.

P-Board

Plugs onto the right side of the D-Board at D2, D11, D12 and D3 connectors (P2, P11, P12 and P3 on P-Board, respectively); First remove the screws that holds the metal board, from the flyback and from the chassis tray and then use a flat head screwdriverto release the connector locking tabs and pull upwards the board.

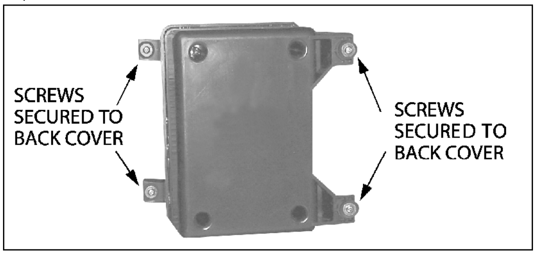
G-Board

Mated to A-Board by three flexible connectors A1, A2, A3 and D40 from D-Board. To remove this board, first unplug the four flexible connectors, then RT1, G4 and G14 connectors, then pull upwards the board while unlock the tabs from the chassis tray.

Speakers

Each speaker is secured to a plastic base with 4 screws, and each plastic base is secured to the from cabinet with two screws. For models including subwoofer speaker is assembled within the backcover of the television set by 4 screws

Subwoofer



NOTE

When reassembling speakers be sure to connect the speaker wires to the correct speaker lead (+) (-)

11.1. Disassembly for CRT replacement

1. **Discharge the CRT as instructed in the "safety precautions" section and remove 2nd anode button from the CRT.**
2. **Remove speaker modules (R and L)**
3. **Perform complete removal of chassis, as instructed in "disassembly for service" section.**

NOTE

When remounting the CRT, reuse the metal sheet located in the lower part of the cabinet holding the CRT, hold with screws to the cabinet. This metal sheet is not supplied with the CRT replacement.

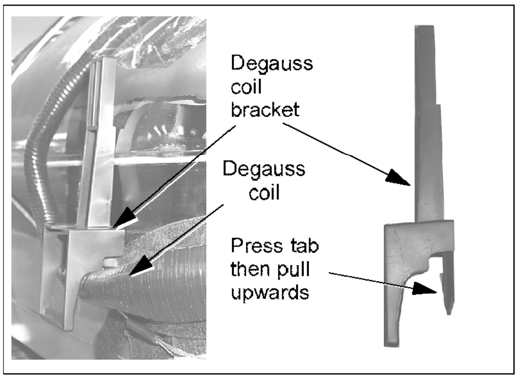
CRT replacement

1. **Perform "disassembly for CRT replacement" procedure.**
2. **Insure that the CRT H.V. Anode button is discharged before handling the CRT. Read the "safety precautions" section on handling the picture tube.**
3. **Remove the components from the CRT neck and place the cabinet face down on a soft pad.**
4. **Note the original order for the CRT mounting hardware as they are remove from the CRT mounting brackets at each corner of the CRT.**

5. **Remove the CRT with the degaussing coil and the dag ground braid attached.**

NOTE
To remove the four brackets holding the degauss coil from the corners of the CRT, first remove the CRT from the cabinet, then remove the brackets by pressing the tab on the bracket and pull upwards. These brackets are included in the degauss coilkit, for part number, please see parts list section

Brackets removal



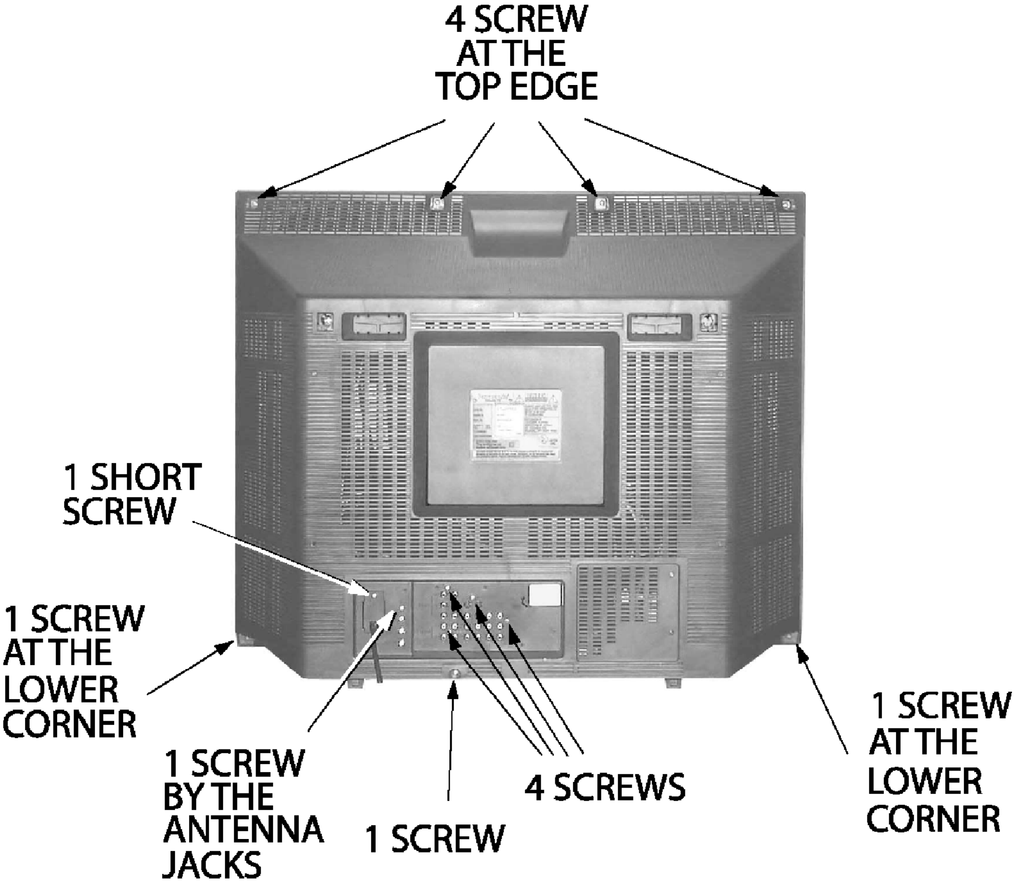
6. **Note the original locations and mounting of the degaussing coil and the dag ground assembly to insure proper reinstallation on the replacement CRT.**
   To remove and remount the degaussing coil:
   - **Unhook the coil spring from the bottom corners of the CRT ears.**
   - **Release the braid loop from the upper corners of the CRT ears.**
7. **Mount the dag ground braid on the replacement CRT. Position the degaussing coil with new ties.**
   Dress coil as was on the original CRT.
8. **Replace the components on CRT neck and reinstall into cabinet. Verify that all ground wires and circuit board plugs get connected.**

NOTE
Reuse all the clampers and mounting brackets from the degauss coil and screen, and when remounting the degauss coil assure that is not touching the speakers, this can be done by placing some tape, this may cause mask vibration. The mounting brackets andclampers are not supplied with the replacements.

IMPORTANT NOTICE

**When ordering the CRT, please order CRT and CRT kit also.
Please see parts list section for part numbers**

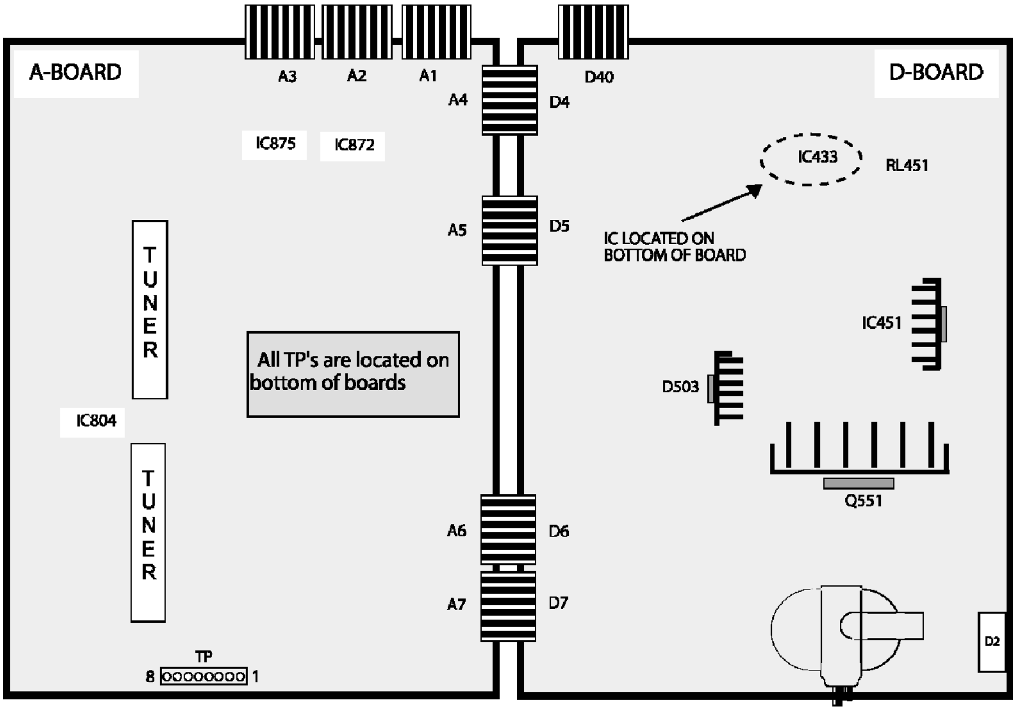
12. Back cover removal


4 SCREW AT THE TOP EDGE
1 SHORT SCREW
1 SCREW AT THE LOWER CORNER
1 SCREW BY THE ANTENNA JACKS
1 SCREW
4 SCREWS
1 SCREW AT THE LOWER CORNER

NOTE:
Cabinet appearance and location of the screws may vary depending on the model.

13. Chassis service adjustment procedures

All service adjustments are factory preset and should not require adjustment unless controls and/ or associated components are replaced.


A-BOARD
A3
A2
A1
A4
D40
D4
D-BOARD
IC875
IC872
IC433
RL451
A5
D5
IC LOCATED ON BOTTOM OF BOARD
TUNER
IC451
All TP's are located on bottom of boards
D503
IC804
TUNER
Q551
A6
D6
A7
D7
D2
TP
8
1

140.0_V B+ voltage check

1. **Set the BRIGHT and PICTURE to minimum by using the PICTURE menu.**
2. **Connect the DVM on TPD144 (D-Board by D2 connector) and cold ground**
3. **Confirm that B+ voltage is 144.0V ± 1.5V. This voltage supplies B+ to the horizontal output and flyback circuits.**

Source voltage chart

120V AC line input. Set the BRIGHT and the PICTURE to minimum by using the PICTURE menu. Use cold or hot ground for the (-) lead of the DVM as needed

A-BOARD	VOLTAGE
STBY 7V (BY IC804) A-Board TPP9	7.5 ± 0.6V
MAIN 9V (BY IC875) A-Board TPA7	9.0V ± 0.5V
MAIN 5V (BY IC871) A-Board TPA8	5.0V ± 0.3V
GC 2.5V (BY IC872) A-Board TPA9	2.5V ± 0.2
STBY 3.3V (BY A1 CONNECTOR) A-Board TPA16	3.3V ± 0.2V
D-BOARD	VOLTAGE
+B2 (BY D2 CONNECTOR) D-Board TPD144	144.0 ± 1.5V
25V (BY D40 CONNECTOR) D-Board TPD250	27.5 ± 2.0V
15V (BY D4 CONNECTOR) D-Board TPD150	15.7 ± 1.5V
-15V (BY RL451) D-Board TPD151	-16.0V ± 1.5V
SOUND+ (BY D4 CONNECTOR) D-Board TPD160	16.5V ± 1.0V
SOUND- (BY D4) D-Board TPD161	-16.5V ± 1.0V
220V (BY D2 CONNECTOR) D-Board TPD7	215V ± 5.0V
12V (BY IC433) D-Board TPA6	12V ± 0.5V

High voltage check

1. **Select an active TV channel and confirm that horizontal is in sync.**
2. **Adjust BRIGHTNESS and PICTURE using PICTURE icon menu so video just disappears.**
3. **Confirm B+ 144 ± 1.5V is within limit.**
4. **Using a high voltage meter confirm that the high voltage is 33.0 ± 1.0kV**

14. Purity and convergence procedure

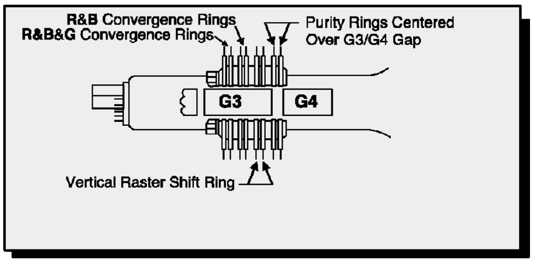
Adjustment is necessary only if the CRT or the deflection yoke is replaced or if the setting was disturbed. The complete procedure consists of:

1. **Vertical raster shift adjustment.**
2. **Initial static convergence.**
3. **Setting the purity.**
4. **Final static convergence.**

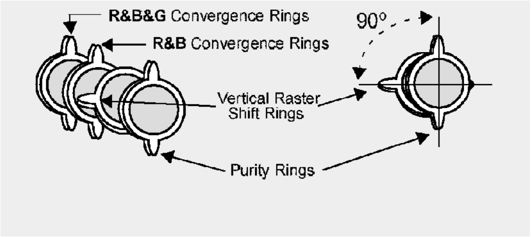
WHEN THE CRT OR THE YOKE IS REPLACED

Place the yoke on the CRT neck (do not tighten the clamp). Place the vertical raster shift tabs at 3 o'clock (90° from the purity and convergence tabs

Description of rings


R&B Convergence Rings
R&B&G Convergence Rings
Purity Rings Centered Over G3/G4 Gap
G3
G4
Vertical Raster Shift Ring

Initial position of rings


R&B&G Convergence Rings
R&B Convergence Rings
90°
Vertical Raster Shift Rings
Purity Rings

Turn the receiver ON. Operate the receiver for 60 minutes using the first purity check field (white screen) to stabilize the CRT.

Fully degauss the receiver by using an external degaussing coil.

Slide the deflection yoke back and forth on the neck of the CRT until it produces a near white, uniform raster.

VERTICAL RASTER SHIFT ADJUSTMENT

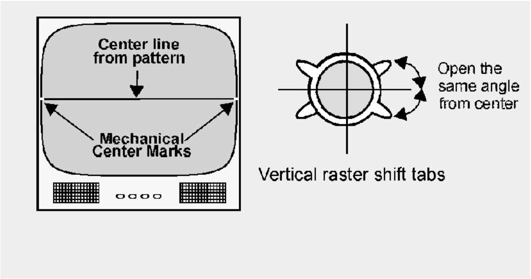
Apply a green pattern with a horizontal line, adjust the Deflection Yoke so that has no tilt, then secure it.

Adjust center line of the pattern with the mechanical center of the CRT, this center is determined by two marks at the side edges of the screen. To adjust the line, once the vertical raster shift tabs are place at 3 o'clock to reduce itsmagnetic field effect open the tabs the same angle from the center, until the center line of the pattern becomes a straight line, centered with the marks of the CRT.

IMPORTANT NOTICE

Rings come along with deflection yoke in one piece.

Vertical raster shift adjustment


Center line from pattern
Mechanical Center Marks
Open the same angle from center
Vertical raster shift tabs

INITIAL CENTER STATIC CONVERGENCE

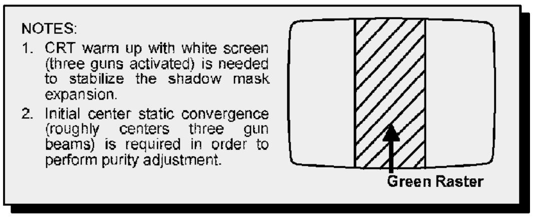
Connect a dot/cross hatch generator to the receiver and tune in a signal. Observe misconvergence at center of the screen only.
Adjust the R&B pole magnets; by separating tabs and rotating to converge blue with red.
Adjust the R&B and R&B&G pole magnets: by separating tabs and rotating to converge blue and red (magenta) with green.

NOTE
Precise convergence at this point is not important.

PURITY ADJUSTMENT

When the receiver is in the serviceman mode for making electronic adjustments, press the RECALL button on the remote control to enter purity check. (See the service adjustments electronic controls procedure).
Operate the receiver for 60 minutes using the first purity check field (white screen) to stabilize the CRT.
Fully degauss the receiver by using an external degaussing coil
Press the RECALL button on the remote control again until the purity check (green screen) appears.
Loosen the deflection yoke clamp screw and move the deflection yoke back as close to the purity magnet as possible.
Adjust the purity rings to set the vertical green raster precisely at the center of the screen

Green raster adjustment



NOTES:
1. CRT warm up with white screen (three guns activated) is needed to stabilize the shadow mask expansion.
2. Initial center static convergence (roughly centers three gun beams) is required in order to perform purity adjustment.

Slowly move the deflection yoke forward until the best overall green screen is displayed.
Tighten the deflection yoke clamp screw.
Press the RECALL button on the remote control again until the purity check blue and red screens appear and observe that good purity is obtained on each respective field.
Press the RECALL button on the remote control again until purity check (white screen) appears.
Observe the screen for uniform white. If purity has not been achieved, repeat the above procedure.

FINAL CONVERGENCE PROCEDURE

NOTE
Vertical size and focus adjustments must be completed prior to performing the convergence adjustment. Connect a dot pattern generator to the receiver. The brightness level should not be

higher than necessary to obtain a clear pattern.

Converge the red and the blue dots at the center of the screen by rotating the R&B pole static convergence magnets.
Align the converged red/blue dots with the green dots at the center of the screen by rotating the R &B&G pole static convergence magnets. Melt wax with soldering iron to reseal the magnets.
Slightly tilt vertically and horizontally (do not rotate) the deflection yoke to obtain a good overall convergence.
If convergence is not reached at the edges, insert permalloy in the DY corners to achieve proper convergence. Recheck for purity and readjust if necessary.
After vertical adjustment of the yoke, insert wedge at 11 o'clock position, then make the horizontal tilt adjustment.
Secure the deflection yoke by inserting four side wedges.
Apply adhesive between tab (thin portion) of wedge and CRT and place tape over the tab to secure to the CRT.

14.1. DYNAMIC CONVERGENCE ADJUSTMENT

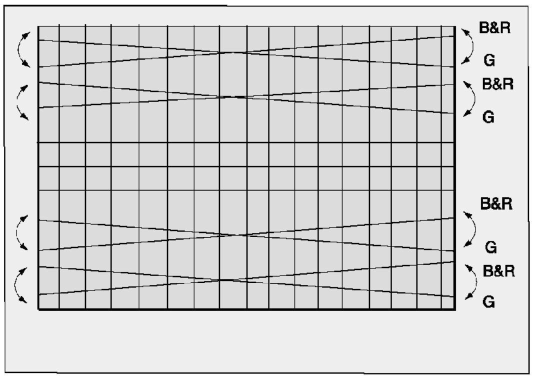
Use this for a precisely overall convergence adjust at the edges.

DY(YHC, YV, XV) ADJUSTMENT

YV ADJUSTMENT / (VR1 FOR HORIZONTAL DYNAMIC CONVERGENCE)

1. **Apply a crosshatch pattern.**
2. **Adjust contrast and brightness customer controls to obtain a correct picture.**
3. **With a driver adjust VR1 (located in deflection yoke board to obtain a proper corvergence at top and bottom of the screen**

VR1 adjustment (YV)



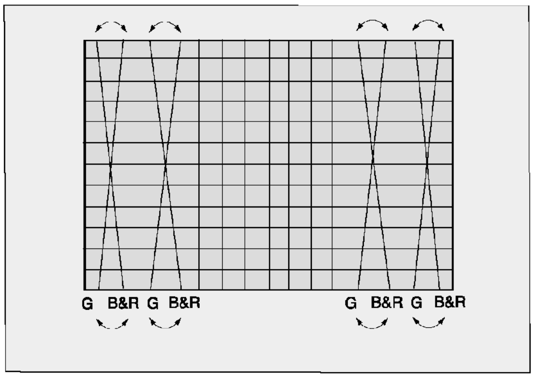
YH Adjustment / (VR2 for vertical dynamic convergence)

1. **Apply a crosshatch pattern.**
2. **Adjust contrast and brightness customer controls to obtain a**

correct picture.

3. With a driver Adjust VR2 (located in deflection yoke board to obtain a proper corvergence at left and right side of the screen.

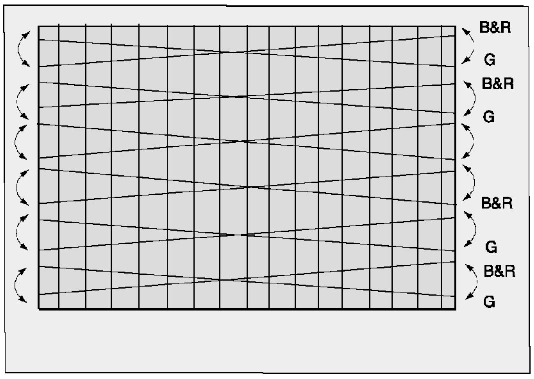
VR2 adjustment (YH)



XV Adjustment (precise adjustment)

1. Apply a crosshatch pattern.
2. Adjust contrast and brightness customer controls to obtain a correct picture.
3. With a driver adjust the coil located in deflection yoke board to obtain a proper convergence horizontally.

Xv adjustment



NOTE
Apply a red pattern and confirm purity, if purity is poor, repeat purity adjustments.

14.2. Permalloy convergence corrector strip (Part No. 0FMK014ZZ)

This strip is used in some sets to match the yoke and CRT for optimum convergence. If the yoke or CRT is replaced, the strip may not be required.
First converge the set without the strip and observe the corners.
First converge the set without the strip and observe the corners.
If correction is needed:

1. **Place strip between CRT and yoke, in quadrant needing correction. Slowly move it around for desired results.**
2. **Press adhesive tightly to the CRT and secure with tape.**

14.3. DAF adjustment / (Dynamic focus adjustment)

The purpose of this adjustment is to move the focus in the picture, so the focus is in balance in the whole picture (same level). Perform this adjustment as a visual adjustment, centering both waveforms, repeat adjustment until best adjustment isobtained.

PREPARATION

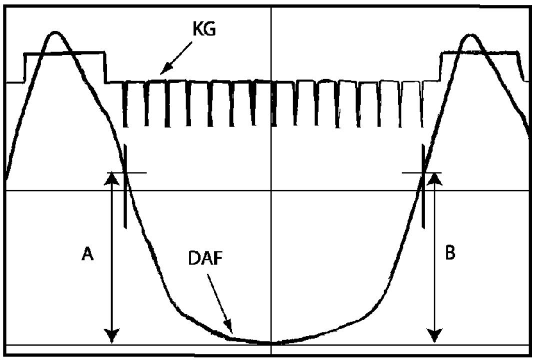
1. **Picture settings normalized.**
2. **Picture mode set to VIVID.**

PREPARATION

1. **Apply a crosshatch pattern.**
2. **Connect channel one of the oscilloscope with 100x1 probe to DAF OUT on J172 (D-Board).**
3. **Connect channel two of the oscilloscope with 10x1 probe to KG (L-Board).**
4. **If the the points A and B are different adjust, in service mode, adjust (HDAFS) DATA so that become the same position.**
5. **Apply a 1080i crosshatch pattern and repeat from step 1 to step 4.**

NOTE
Both waveforms should be centered. Upper waveform could be different depending on the pattern applied

DAF adjustment



Other method (DAF adjustment)

PREPARATION

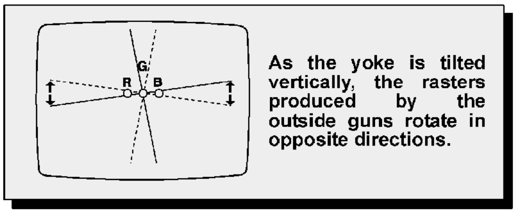
1. **Picture settings normalized.**
2. **Picture mode set to VIVID.**

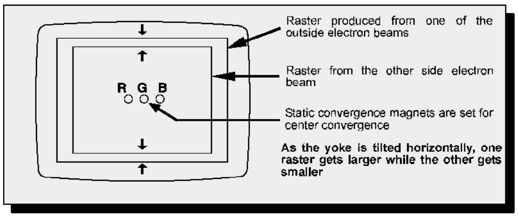
PROCEDURE

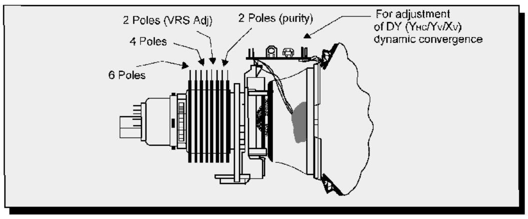
1. **Apply a crosshatch pattern.**
2. **Put a mark in the focus control (on fly-back), so the control can be put back in the original position.**
3. **Turn the focus control (fly-back) fully, so the image is out focus.**
4. **Then in service mode adjust (HDAFS) DATA, so the focus is moving from side to side in the picture.**
5. **Adjust (HDAFS) DATA so the picture looks in balance in left and right.**
6. **Turn focus (fly-back) control back to its original position.**
7. **Apply a 1080i crosshatch pattern and repeat from step 1 to step 6.**

NOTE

Repeat adjustment until best adjustment is obtained. For best adjustment, use oscilloscope as described in previous adjustment method.


G
R
B
As the yoke is tilted vertically, the rasters produced by the outside guns rotate in opposite directions.


R G B
Raster produced from one of the outside electron beams
Raster from the other side electron beam
Static convergence magnets are set for center convergence
As the yoke is tilted horizontally, one raster gets larger while the other gets smaller


2 Poles (VRS Adj)
2 Poles (purity)
For adjustment of DY (YHC/YV/XV) dynamic convergence
4 Poles
6 Poles

15. Service mode (electronic adjustments)

This receiver has electronic technology using the IC bus concept. It performs as a control function and it replaces many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performedby using "on screen display menu". (The service adjustment mode).

NOTE

It is suggested that the technician reads all the way through and understand the following procedure for entering/exiting the service adjustment mode; then proceed with the instructions working with the receiver. When becoming familiarwith the procedure, the flow chart for service mode may be used as a quick guide.

Quick entry to service mode

When minor adjustments need to be done to the electronic controls, the method of entering the service mode without removal of the cabinet back is as follows using the remote control:

1. **Select SET-UP icon and select CABLE mode.**
2. **Select TIMER icon and set SLEEP time for 30 Min.**
3. **Exit menus.**
4. **Tune to the channel 124.**
5. **Adjust VOLUME to minimum (0).**
6. **Press VOL → (decrease) on receiver. Red "CHK" appears in upper corner.**

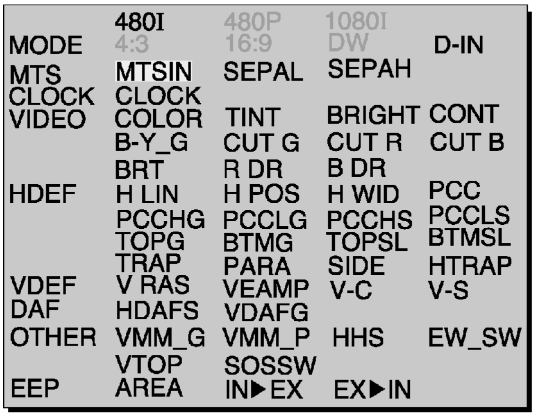
NOTE

After receiver is set into service mode, set TIMER back to NO.

To toggle between aging and service modes:

While the “CHK” is displayed on the left top corner of the CRT, pressing “ACTION” and “VOL” UP on the TV simultaneously will toggle between the modes. Red “CHK” for serviceand yellow “CHK” for aging.

7. Press POWER on the remote control to display the service adjustment modes menu, select adjustment by pressing the volume right/left buttons and channel up/down buttons on the remote and ACTION to enter the adjustment.


480I 480P 1080I
MODE 4:3 16:9 DW D-IN
MTS MTSIN SEPAL SEPAH
CLOCK CLOCK
VIDEO COLOR TINT BRIGHT CONT
B-Y_G CUT G CUT R CUT B
BRT R DR B DR
HDEF H LIN H POS H WID PCC
PCCHG PCCLG PCCHS PCCLS
TOPG BTMG TOPSL BTMSL
TRAP PARA SIDE HTRAP
VDEF V RAS VEAMP V-C V-S
DAF HDAFS VDAFG
OTHER VMM_G VMM_P HHS EW_SW
VTOP SOSSW
EEP AREA IN▶EX EX▶IN

NOTE

Some adjustments are available only in some modes (480i, 480p, 1080i); it is needed to apply the format. A 1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.

Exiting the service mode:

This TV goes out from service mode when it is unplugged or turned OFF. To exit the service mode, turn the TV OFF or unplug the TV from A.C.

Other method

Press ACTION and POWER on the receiver simultaneously for at least 2 seconds.

The receiver momentarily shuts off; then comes back on tuned to channel 3 with a preset level of sound.

Any programmed channels, channels caption data and some others user defined settings will be erased when exited by pressing ACTION and POWER on receiver.

IMPORTANT NOTE
Always check that the TV exits the service mode.

To confirm colors

When in service mode (red “CHK” is displayed) press RECALL on the remote control to enter the purity field check mode

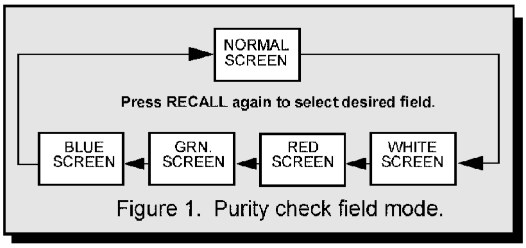


Figure 1. Purity check field mode.

Entering service mode (open-back method)

While the receiver is connected and operating in normal mode, momentarily short test point / FA1 (A15 pin 2) to cold ground (A-Board).
The receiver enters the aging mode.
Yellow letters “CHK” appear in the upper left corner of the screen. / (The volume right/left and channel up/down will adjust rapidly).

15.1. Service adjustment default values for items for 32”

REGISTER	DESCRIPTION	FORMAT			
		NTSC	480p (16:9)	1080i (16:9)	1080i
MTSIN	INPUT LEVEL	1A			
SEPAL	LOW LEVEL SEPARATION	6			
SEPAH	HIGH LEVEL SEPARATION	20			
CLOCK	CLOCK	128			
COLOR	COLOR	2F		17	
TINT	TINT	76		81	
BRIGH	SUB-BRIGHTNESS	3B		42	
CONT	SUB-CONTRAST	23		65	
B-Y_G	MAGENTA TINT ADJ	2E		3E	
CUT G	GREEN CUT-OFF	01 65			
CUT R	RED CUT-OFF	01 85			
CUT B	BLUE CUT-OFF	01 A6			
BRT	BGRIGHT				
R DR	RED DRIVE	A0			
B DR	BLUE DRIVE	A0			
HLIN	HORIZONTAL LINEARITY	79		7F	
HPOS	HORIZONTAL POSITIONING	01 7A		01 82	

REGISTER	DESCRIPTION	FORMAT			
		NTSC	480p (16:9)	1080i (16:9)	1080i
HWID	HORIZONTAL WIDTH	54		2F	
PCC	PINCUSHION CORRECTION	50	2A	31	3E
PCCHG	PINCUSHION HIGH	6	0A	9	7
PCCLG	PINCUSHION LOW	2	7	5	9
PCCHS	PINCUSHION HIGH	4	3	3	3
PCCLS	PINCUSHION LOW	3	3	3	3
TOPG	TOP CORNER PINCUSHION	5B	55	4C	5E
BTMG	BOTTOM CORNER PINCUSHION	45	32	49	4A
TOPSL	TOP CORNER PINCUSHION SLICE LEVEL	2	8	6	7
BTMSL	BOTTOM CORNER PINCUSHION SLICE LEVEL	2	8	5	7
TRAP	TRAPEZOID	83	7E	7F	7D
PARA	PARALLELOGRAM	3	4	4	8
SIDE	E-W PINCUSHION ADJUSTMENT	4	6	7	8
HTRAP	HORIZONTAL TRAPEZOID	1A	1A	1A	14
VRAS	VERTICAL POSITION	8C	71	7B	79
VEAMP	VERTICAL SIZE	A8	E2	99	9A
V-C	VERTICAL LINEARITY	21	26	25	24
V-S	VERTICAL S CORRECTION	30	25	17	33
HDAFS	HORIZONTAL DAF PHASE	59		01 C5	A0
VDAFG	VERTICAL DAF GAIN	A0	63	60	0
VMM_G	----------------	F0		F0	
VMM_P	----------------	F3		F3	
HHS	----------------	CB			
EW_SW	----------------	0	0	0	
VTOP	----------------	9C	7E	79	9E
SOSSW	----------------	1		1	

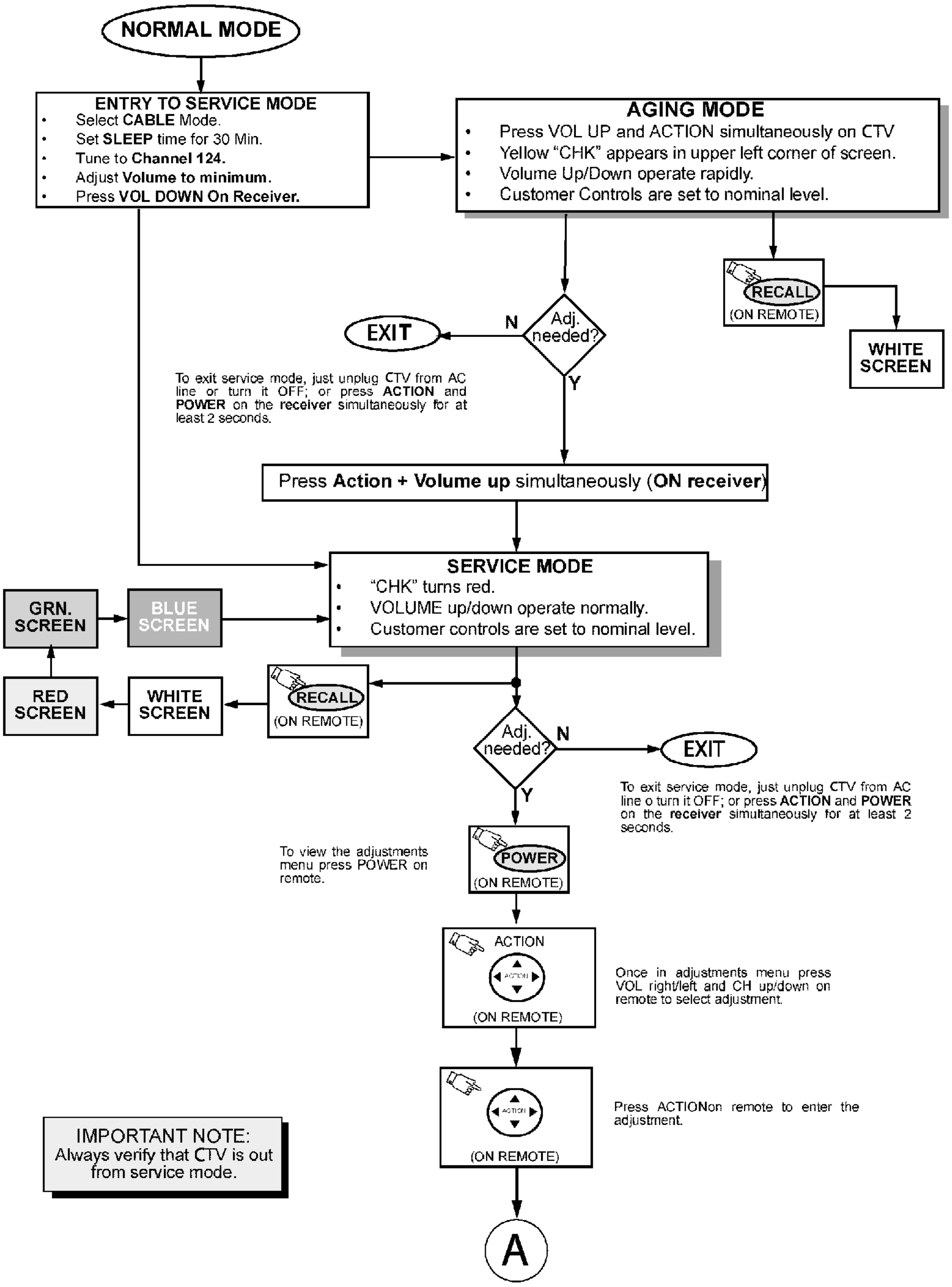
NOTE:
The above table shows the default values for the service items, this values can change depending on the serviced TV.

15.2. Service adjustment default values for items for 36”

REGISTER	DESCRIPTION	FORMAT			
		NTSC	480p (16:9)	1080i (16:9)	1080i (
MTSIN	INPUT LEVEL	1A			
SEPAL	LOW LEVEL SEPARATION	6			
SEPAH	HIGH LEVEL SEPARATION	20			
CLOCK	CLOCK	128			
COLOR	COLOR	2F		17	
TINT	TINT	7E		81	
BRIGH	SUB-BRIGHTNESS	3B		42	
CONT	SUB-CONTRAST	23		2E	
B-Y_G	MAGENTA TINT ADJ	2E		3E	
CUT G	GREEN CUT-OFF	01 65			
CUT R	RED CUT-OFF	01 85			
CUT B	BLUE CUT-OFF	01 A6			
BRT	BGRIGHT				
R DR	RED DRIVE	A0			
B DR	BLUE DRIVE	A0			
HLIN	HORIZONTAL LINEARITY	7F		7F	
HPOS	HORIZONTAL POSITIONING	01 7B		01 82	
HWID	HORIZONTAL WIDTH	5D		3E	
PCC	PINCUSHION CORRECTION	2C	19	31	3E
PCCHG	PINCUSHION HIGH	1F	1F	9	7
PCCLG	PINCUSHION LOW	2	16	5	9
PCCHS	PINCUSHION HIGH	3	3	3	3
PCCLS	PINCUSHION LOW	3	2	3	3
TOPG	TOP CORNER PINCUSHION	5B	49	4C	5E
BTMG	BOTTOM CORNER PINCUSHION	42	2D	49	4A
TOPSL	TOP CORNER PINCUSHION SLICE LEVEL	3	5	6	7
BTMSL	BOTTOM CORNER PINCUSHION SLICE LEVEL	1	6	5	7
TRAP	TRAPEZOID	81	7D	7F	7D
PARA	PARALLELOGRAM	7	9	4	8
SIDE	E-W PINCUSHION ADJUSTMENT	8	8	7	8
HTRAP	HORIZONTAL TRAPEZOID	16	16	1A	14
VRAS	VERTICAL POSITION	87	72	8A	79
VEAMP	VERTICAL SIZE	BD	A6	99	9A
V-C	VERTICAL LINEARITY	1F	26	25	24
V-S	VERTICAL S CORRECTION	32	25	17	33
HDAFS	HORIZONTAL DAF PHASE	59		01 C5	
VDAFG	VERTICAL DAF GAIN	60	63	60	A0
VMM_G	----------------	F0		F0	
VMM_P	----------------	F3		F3	
HHS	----------------	CB			
EW_SW	----------------	0	0	0	0
VTOP	----------------	9C	7E	79	9E
SOSSW	----------------	1		1	1

NOTE:
The above table shows the default values for the service items, this values can change depending on the serviced TV.

15.3. Instructional flow chart for service mode


NORMAL MODE
ENTRY TO SERVICE MODE
Select CABLE Mode.
Set SLEEP time for 30 Min.
Tune to Channel 124.
Adjust Volume to minimum.
Press VOL DOWN On Receiver.
AGING MODE
Press VOL UP and ACTION simultaneously on CTV
Yellow "CHK" appears in upper left corner of screen.
Volume Up/Down operate rapidly.
Customer Controls are set to nominal level.
RECALL
(ON REMOTE)
WHITE SCREEN
EXIT
N
Adj. needed?
Y
Press Action + Volume up simultaneously (ON receiver)
SERVICE MODE
"CHK" turns red.
VOLUME up/down operate normally.
Customer controls are set to nominal level.
GRN. SCREEN
BLUE SCREEN
RED SCREEN
WHITE SCREEN
RECALL
(ON REMOTE)
Adj. needed?
N
EXIT
Y
POWER
(ON REMOTE)
ACTION
(ON REMOTE)
(ON REMOTE)
A

To exit service mode, just unplug CTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

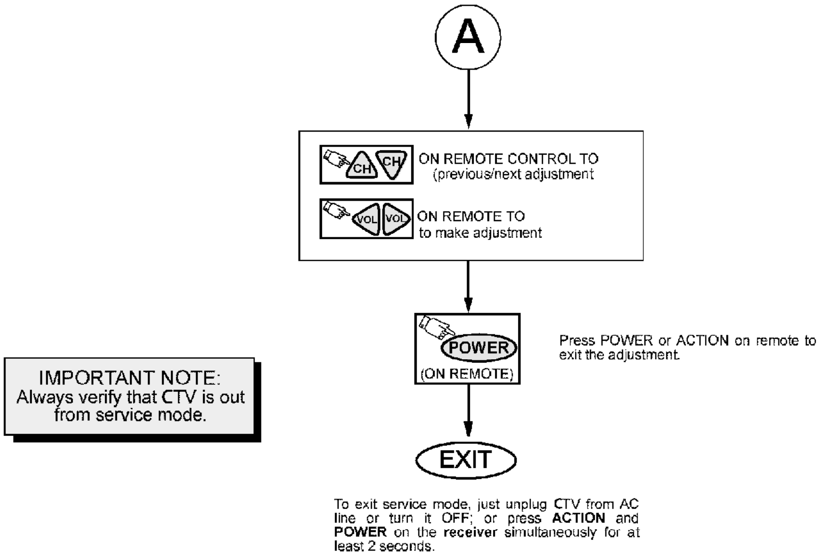
To exit service mode, just unplug CTV from AC line o turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

To view the adjustments menu press POWER on remote.

Once in adjustments menu press VOL right/left and CH up/down on remote to select adjustment.

Press ACTIONon remote to enter the adjustment.

IMPORTANT NOTE:
Always verify that CTV is out from service mode.


A
ON REMOTE CONTROL TO (previous/next adjustment
CH
CH
ON REMOTE TO to make adjustment
VOL
VOL
POWER
(ON REMOTE)
Press POWER or ACTION on remote to exit the adjustment.
IMPORTANT NOTE: Always verify that CTV is out from service mode.
EXIT
To exit service mode, just unplug CTV from AC line or turn it OFF; or press ACTION and POWER on the receiver simultaneously for at least 2 seconds.

16. Service adjustments (electronic controls)

NOTE
Please correlate with available pattern on all adjustments

16.1. (NTSC) Sub-Brightness / Service DAC adjustment (BRIGHT)

Adjustment of this control is important for setting proper operation of customer brightness and picture controls. Do not adjust the SCREEN VR after the sub-brightness is set.

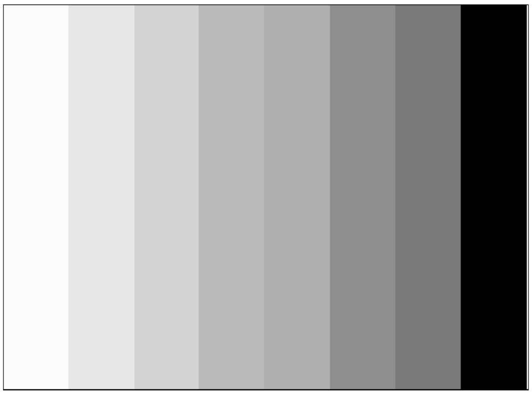
Preparation

1. **Normalize picture settings.**
2. **Picture mode set to VIVID.**
3. **Switch NATURAL COLOR to OFF.**
4. **Switch COLOR TEMPERATURE to COOL.**

Procedure

1. **Apply a colorbar with no color pattern.**
2. **In the service mode for making electronic adjustments, select the DAC adjustment “BRIGHT” and adjust data so that 7.5IRE part is the same light output as the 3IRE part**

Bars pattern



16.2. (1080i) Sub-Brightness / Service DAC adjustment (BRIGHT)

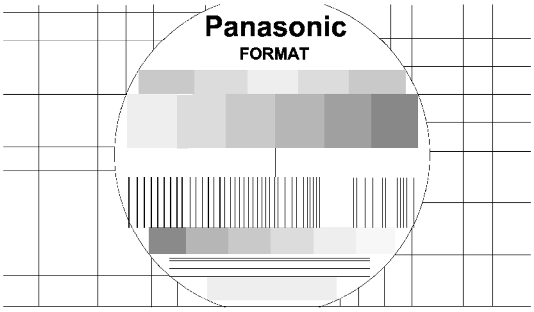
Adjustment of this control is important for setting proper operation of customer brightness and picture controls. Do not adjust the SCREEN VR after the sub-brightness is set.

Preparation

1. **Normalize picture settings.**
2. **Picture mode set to VIVID.**
3. **Switch NATURAL COLOR to OFF.**
4. **Switch COLOR TEMPERATURE to COOL.**

Procedure

1. **Apply a colorbar with no color pattern.**
2. **In the service mode for making electronic adjustments, select the DAC adjustment “BRIGHT” and adjust data so that 7.5IRE part is the same light output as the 3IRE part**



16.3. (NTSC) Sub-Contrast / Service DAC adjustment (CUT-G, CONT)

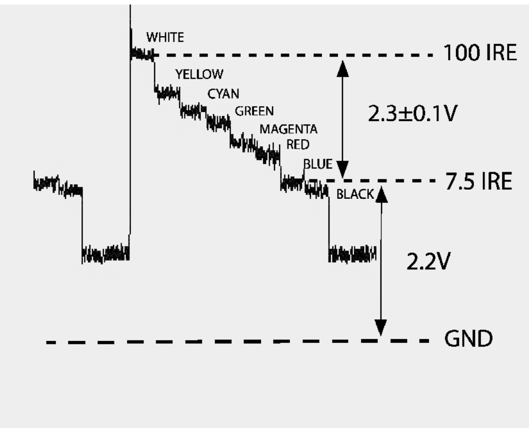
This adjustment is factory set. Do not adjust unless repairs are made to associated circuit, the CRT Board or when the CRT is replaced.

Preparation

1. Apply a colorbar pattern.
2. Set the PICTURE settings to normal.
3. Set color to minimum (no color on picture).
4. Set PICTURE mode to VIVID
5. Connect the oscilloscope to TP47G.

Procedure

1. In the service mode, select DAC for brightness adjustment "BRIGH" and set data to "1 D0".
2. In service mode, select DAC for green cutoff adjustment "CUT-G", and adjust data to obtain 2.2 V between 7.5IRE and GND level at TP47G. (See waveform detail)
3. In service mode, select DAC for contrast adjustment "CONT", and adjust data to obtain 2.3±0.1V between 7.5IRE and 100IRE level at TP47G. (See waveform detail)



16.4. (1080i) Sub-Contrast / Service DAC adjustment (CUT-G, CONT)

This adjustment is factory set. Do not adjust unless repairs are made to associated circuit, the CRT Board or when the CRT is replaced.

PREPARATION

1. Apply a 1080i pattern (colorbar no color).
2. Set the PICTURE settings to normal.

3. Set PICTURE mode to VIVID
4. Connect the oscilloscope to TP47G.

PROCEDURE

1. In the service mode, select DAC for brightness adjustment “BRIGH” to obtain 2.0V between 0 IRE and GND level at TP47G
2. In service mode, select DAC “CONT”, and adjust data to obtain 2.5 ±0.1V between 0 IRE and 100 IRE level at TP47G

16.5. (NTSC) Color output adjustment / Service DAC adjustment (COLOR, TINT)

NOTE

if a rainbow pattern generator is available perform the following procedure; the next section describes the procedure with no rainbow pattern.

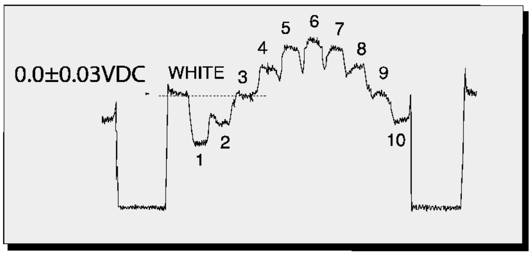
Make sure that sub-contrast adjustment was finished prior to perform this adjustment

PREPARATION

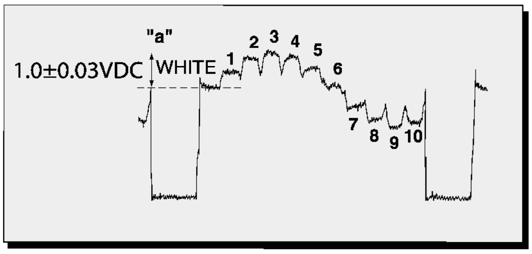
1. Normalize the picture settings.
2. Set picture mode to VIVID
3. Switch NATURAL COLOR to OFF.

PROCEDURE

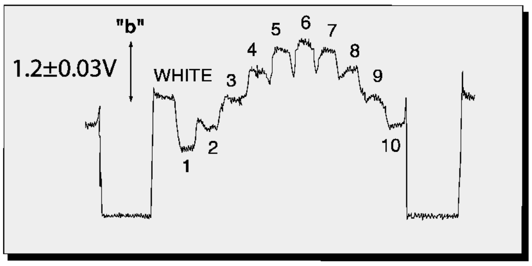
1. Apply a rainbow color bar pattern.
2. In service mode adjust “R DR” and “B DR” data to “80”.
3. Connect the oscilloscope to TP47B.
4. In service mode adjust “TINT” data so that the peak white is located at same level as peak “3”, within 0±0.03V. (See waveform detail)


0.0±0.03VDC
WHITE
1
2
3
4
5
6
7
8
9
10

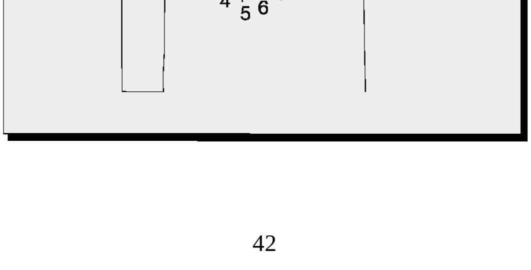
5. Connect the oscilloscope to TP47R.
6. In service mode adjust “COLOR” data so that the amplitude “a” is 1.0±0.03V.


"a"
1.0±0.03VDC
WHITE
1
2
3
4
5
6
7
8
9
10

7. Connect the oscilloscope to TP47B.
8. In service mode adjust “B-Y G” data so that the amplitude “b” is 1.2±0.03V (between 3rd and 6th peaks).


"b"
1.2±0.03V
WHITE
1
2
3
4
5
6
7
8
9
10

9. With oscilloscope still connected to TP47B, adjust “TINT” data so that the peak “9” is located at same level as peak “3”, within 0± 0.03V, then increase “TINT” databy 9 steps.
10. Connect oscilloscope to TP47G.
11. In service mode adjust “COLOR” data so that the amplitude “C” is 0.92~0.02V.


WHITE
1
2
3
4
5
6
7
8
9
10
C
1.3±0.03V

12. Apply a studio color bar pattern and confirm that saturation and phase are normal (normal image).

16.6. (NTSC) Color output adjustment / Service DAC adjustment / (COLOR, TINT, B-Y_G)

NOTE
Color and tint adjustment sets the reference settings for the user controls; It is important to read the procedures.

(NO RAINBOW PATTERN)
Make sure that sub-contrast adjustment was finished prior to perform this adjustment

PREPARATION

1. Normalize the picture settings.
2. Set picture mode to VIVID
3. Switch NATURAL COLOR to OFF.

PROCEDURE

1. Apply a color bar pattern.
2. In service mode adjust “R DR” and “B DR” data to “80”.
3. In service mode adjust “TINT” data so that the color does not become greenish or redish.
4. In service mode adjust “COLOR” data so that the color level is not too high (saturated) or too low (tending to black and white).
5. In service mode adjust “B-Y G” data so that blue and green seem natural.
6. confirm that saturation and picture are normal (normal image).
7. If image is not satisfactory, repeat adjustment until the images is normal and natural

NOTE
The image can be compared against other set to see the image quality.

16.7. (1080i) Color output adjustment / Service DAC adjustment (COLOR, TINT

Make sure that sub-contrast adjustment was finished prior to perform this adjustment

PREPARATION

1. **Normalize the picture settings.**
2. **Set picture mode to VIVID**
3. **Switch NATURAL COLOR to OFF.**

PROCEDURE

1. **Apply a 1080i pattern or signal**
2. **In service mode adjust “R DR” and “B DR” data to “80”.**
3. **In service mode adjust “TINT” data so that the color does not become greenish or redish.**
4. **In service mode adjust “COLOR” data so that the color level is not too high (saturated) or too low (tending to black and white).**
5. **In service mode adjust “B-Y G” data so that blue and green seem natural.**
6. **confirm that saturation and picture are normal (normal image).**
7. **If image is not satisfactory, repeat adjustment until the images is normal and natural.**

NOTE
The image can be compared against other set to see the image quality.

16.8. Color temperature adjustment / (B/W Tracking) / Service DAC Adjust. / (CUT R) (CUT G) (CUT B) (R DR) (B DR)

Minor Touch-Up Method

OBSERVE low and high brightness areas of a B/W picture for proper tracking. Adjust only as required for “good gray scale and warm highlights”.

1. **LOW LIGHT areas - In service mode for making electronic adjustments, select CUT R, CUT G, CUT B and adjust the picture for gray.**
2. **HIGH LIGHT areas - In service mode for making electronic adjustments, select drive R DR, B DR and adjust the picture for warm whites.**

Complete adjustment

PREPARATION

1. **Turn the receiver “ON” and allow 30 minutes warm up at WHITE PATTERN.**
2. **Apply a color bar pattern (with no color).**
3. **Turn the SCREEN control (part of FBT T551) fully counterclockwise.**
4. **Preset the following service DACs for best results:**

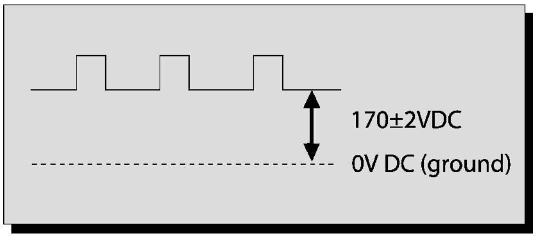
- BRIGH	**1 D0**
- CUT R	**0 00**
- CUT G	**1 80**
- CUT B	**0 00**
- R DR	**80**
- B DR	**80**
- PICTURE SETTINGS	**NORMALIZED**
- PICTURE MODE	**VIVID**

PROCEDURE

1. **Connect the oscilloscope to KG (CRT-Board).**
2. **In service mode for making electronic adjustment, select “BRIGH” DAC.**
3. **Press RECALL button on the remote control to collapse the raster. (service SW).**
4. **Connect oscilloscope to KG on L-Board and adjust service mode “CUT-G” DAC until 170±2V above DC ground is measured**

5. **Remove the probe from KG.**
6. **Turn screen clockwise slowly until color is slightly appeared.**
7. **Then adjust “CUT R” and “CUT B” until line becomes white.**
8. **Press RECALL button on the remote to restore the raster.**
9. **Adjust “R DR” and “B DR” so the white seems like white and black like black**
10. **Apply a normal signal and confirm that the image is normal and a good gray scale**
11. **If correction is needed perform minor touch-up method.**

NOTE
This adjustment (NTSC) will adjust automatically 480p and 1080i formats, no need to adjust for these formats



16.9. Deflection adjustments

To reset deflection adjustments
To reset deflection adjustments to factory adjusted default, enter to service mode (with red CHK displayed), press POWER button on remote to display the service menu, then press and hold RECALL button for at least three seconds, a reset messagewill appear in the image.
Use this feature when deflection adjustment gets off adjustment to the point that it cannot be adjusted back easily.

NOTE
Deflection adjustment for 480i/480p, 480i/480p 16:9 and 480i/480p split, 1080i letter and split mode are provided differently.

16.9.1. (480i/480p) / H-Center adjustment

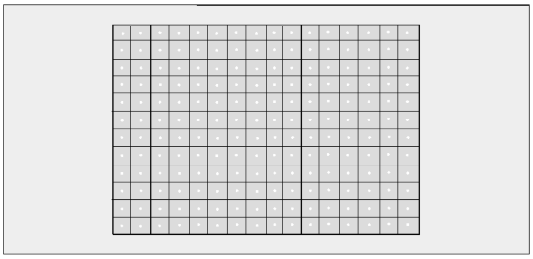
PREPARATION

1. **Apply a crosshatch pattern.**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. **If horizontal linearity is poor, in service mode, adjust data "H LIN"**

H-Adjustment



2. **Apply a pattern to center the picture.**
3. **If the horizontal center is not aligned, in service mode adjust "H POS" DATA to adjust the horizontal center of the monoscope pattern to the CRT center.**

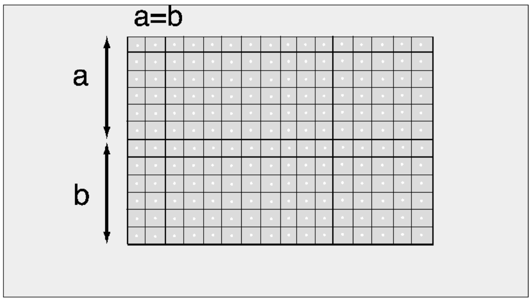
16.9.2. (480i/480p) / Vertical linearity(V-C), V-Size and V-Position adjustment

PREPARATION

1. **Apply a crosshatch pattern**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. **Enter service mode, select DAC adjustment / "V-RAS" and adjust crosshatch pattern to center vertical position to the CRT center.**
2. **Adjust linearity data "V-C" so that interval of "a" is same as "b" (a= b).**



3. If the v-position is not at the CRT center, adjust / V position “V RAS” DATA again.
4. Adjust H-TRAPEZOID data “HTRAP” so that the upper and lower lines becomes horizontal.

16.9.3. (480i/480p) / V-S, V-Size adjustment

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

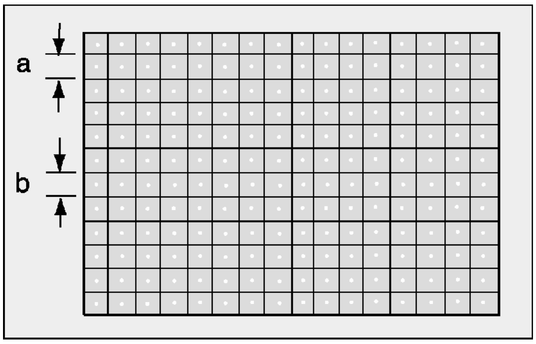
1. Enter to service mode
2. Check a and b sizes, If b-a < -1.5mm (in top & bottom extending case)

    - Increase “V-S” DATA by one step
    - Adjust “VEAMP” so that V-SIZE is regular size again.

    NOTE
    Repeat “a” and “b” until b-a ± 1.5mm

3. Confirm to make outermost circle of monoscope pattern a correct circle

V-Adjustment



16.9.4. (480i/480p) / Trapezoid adjustment

PREPARATION

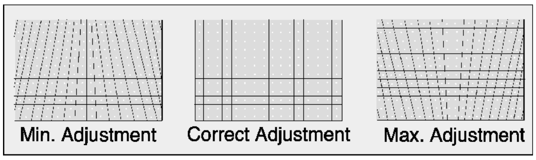
1. Apply a crosshatch pattern

2. Normalize the picture settings.

3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “TRAP” and adjust DATA so that lines at right and left are vertical like a solid line



16.9.5. (480i/480p) / Parallelogram adjustment

PREPARATION

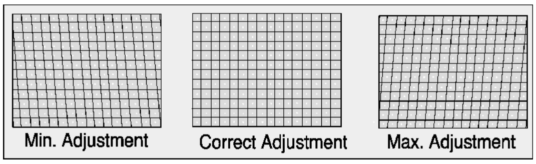
1. Apply a crosshatch pattern

2. Normalize the picture settings.

3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “PARA” and adjust so that the lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

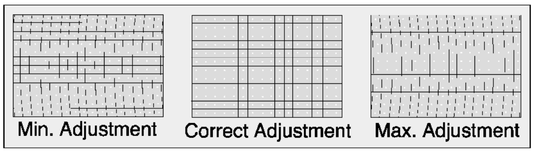
16.9.6. (480i/480p) / E-W PCC balance adjustment

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “SIDE” and adjust so that lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

16.9.7. (480i/480p) / PCC adjustment

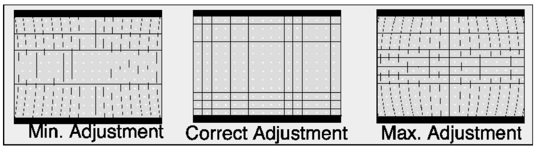
PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “PCC” DATA so that the 1st line and 3rd line make a good balance

PCC adjustments


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If side and lower side is imbalanced, adjust "PCCHG" and "PCCLG" so that "PCC" make good balance.

16.9.8. (480i/480p) / Corner PCC adjustment

PREPARATION

1. Apply a crosshatch pattern

2. Normalize the picture settings.

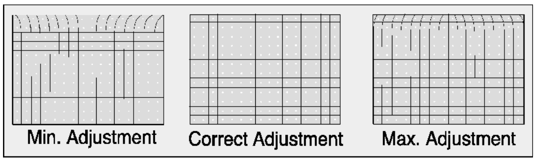
3. Set picture mode to VIVID

PROCEDURE

1. To adjust upper and lower linearity.

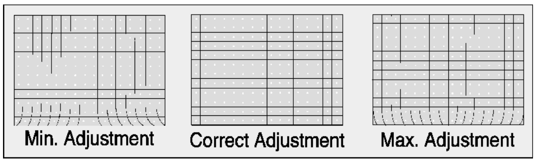
2. Adjust "TOPG" to straighten upper lines

Top adjustment


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust "BTMG" to straighten lower lines

Bottom adjustment


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust "TOPSL" and "BTMSL" of slice level.

16.9.9. (480i/480p) / H-Size adjustment

PREPARATION

1. **Use a pattern that permits centering the image**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. **Adjust "H WID" DATA so that left width and right become in good balance (not too wide or narrow).**

16.9.10. (480i/480p 16:9 and 480i/480p split) Vertical linearity(V-C) and V-Position adjustment

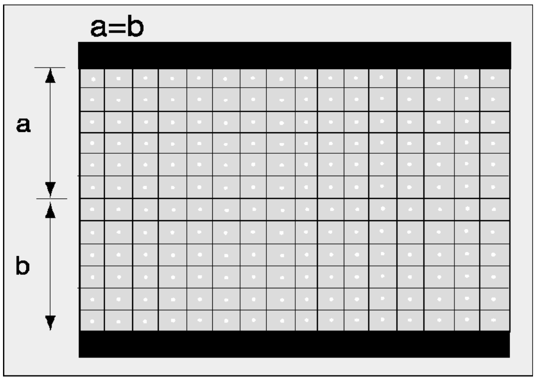
PREPARATION

1. **Apply a 480p pattern**
2. **Set mode to 16x9 in set-up menu**
3. **Normalize the picture settings.**
4. **Set picture mode to VIVID**

PROCEDURE

1. **Enter service mode, select DAC adjustment / "V-RAS" and adjust crosshatch pattern to center vertical position to the CRT center.**
2. **Adjust linearity data "V-C" so that interval of "a" is same as "b" (a= b).**

Linearity adjustment



16.9.11. (480i/480p 16:9 and 480i/480p split) / V-S, V-Size adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

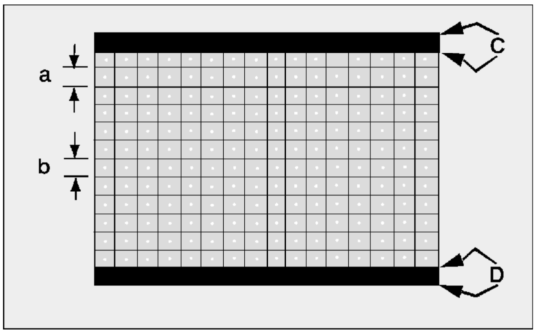
PROCEDURE

1. Enter to service mode
2. Adjust “VAMP” so that width C and D becomes 60mm for 32” and 70mm for 36”
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)

   - Increase “V-S” DATA by one step
   - Adjust “VEAMP” so that width C and D becomes 60mm for 32” and 70mm for 36”.

   NOTE
   Repeat until b-a ± 1.5mm

V-Adjustment



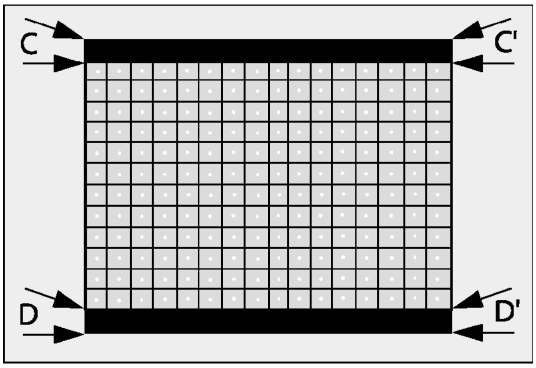
16.9.12. (480i/480p 16:9 and 480i/480p split) / H-Trapezoid adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “HTRAP” and adjust DATA so that upper and lower edges become horizontal (c=c’ and d=d’)



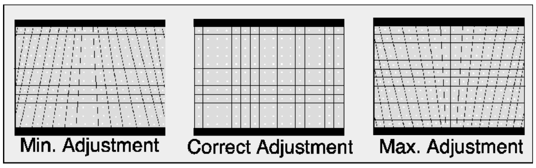
16.9.13. (480i/480p 16:9 and 480i/480p split) / Trapezoid adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “TRAP” and adjust DATA so that lines at right and left are vertical like a solid line



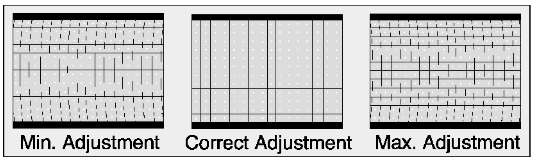
16.9.14. (480i/480p 16:9 and 480i/480p split) / E-W PCC adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “SIDE” and adjust so that lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

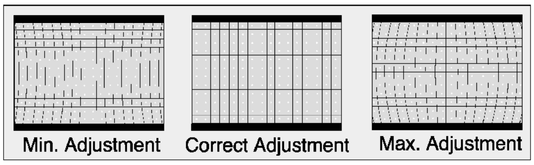
16.9.15. (480i/480p 16:9 and 480i/480p split) / PCC adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “PCC” DATA so that the 1st line and 3rd line make a good balance


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If side and lower side is imbalanced, adjust “PCCHG” and “PCCLG” so that “PCC” make good balance.

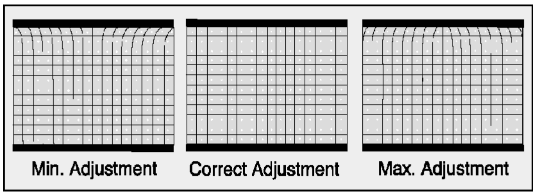
16.9.16. (480i/480p 16:9 and 480i/480p split) / Corner PCC adjustment

PREPARATION

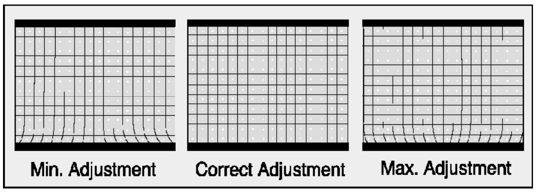
1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. To adjust upper and lower linearity.
2. Adjust “TOPG” to straighten upper lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust “BTMG” to straighten lower lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust “TOPSL” and “BTMSL” of slice level.

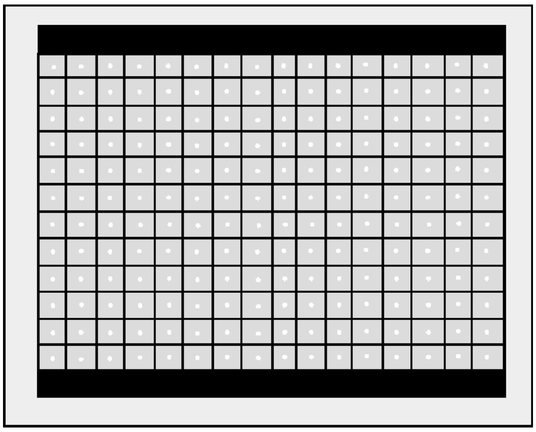
16.9.17. 1080i letter and split) / H-Center adjustment

PREPARATION

1. Apply a 1080i pattern.
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. If horizontal linearity is poor, in service mode, adjust data “H LIN”



2. Apply a pattern to center the picture.
3. If the horizontal center is not aligned, in service mode adjust “H POS” DATA to adjust the horizontal center of the monoscope pattern to the CRT center.

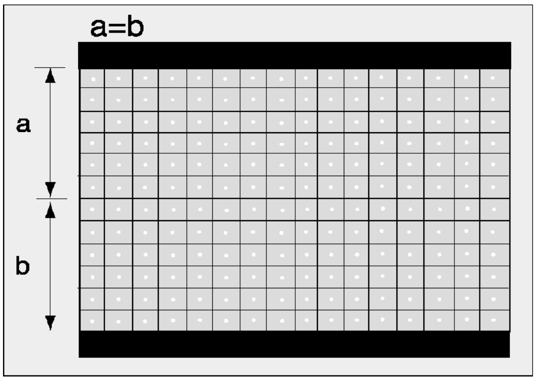
16.9.18. (1080i letter and split) / Vertical linearity(V-C) and V-Position adjustment

PREPARATION

1. Apply a 1080i pattern.
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select DAC adjustment / “V-RAS” and adjust pattern to center vertical position to the CRT center.
2. Adjust linearity data “V-C” so that interval of “a” is same as “b” (a= b).



3. If the v-position is not at the CRT center, adjust again.

16.9.19. (1080i letter and split) / V-S, V-Size adjustment

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter to service mode
2. Adjust “VAMP” so that width C and D becomes 60mm for 32” and 70mm for 36”
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)
    - Increase “V-S” DATA by one step
    - Adjust “VEAMP” so that width C and D becomes 60mm for 32” and 70mm for 36”.

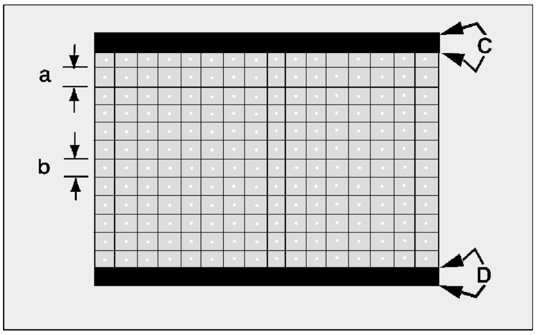
    NOTE
    Repeat until b-a ± 1.5mm

4. Check a and b sizes, If b-a > -1.5mm (in top and bottom extending case)
    - Decrease “V-S” DATA by one step

- Adjust "VEAMP" so that width C and D becomes 60mm for 32" and 70mm for 36".

NOTE

Repeat until b-a ± 1.5mm



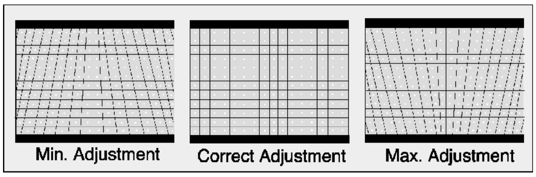
16.9.20. (1080i letter and split) / Trapezoid adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. **Enter service mode, select "TRAP" and adjust DATA so that lines at right and left are vertical like a solid line**



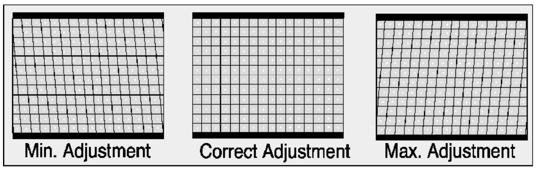
16.9.21. (1080i letter and split) / Parallelogram adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. Enter service mode, select “PARA” and adjust so that the lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

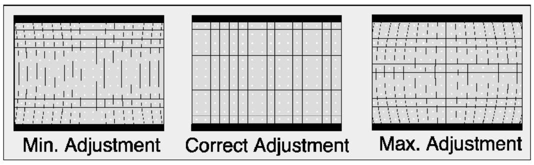
16.9.22. (1080i letter and split) / PCC adjustment

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “PCC” DATA so that the 1st line and 3rd line make a good balance


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE:
If upper and lower side is unbalaced, adjust “PCCHG” and “PCCLG” so that “PCC” make good balance.

16.9.23. (1080i letter and split) / Corner PCC adjustment

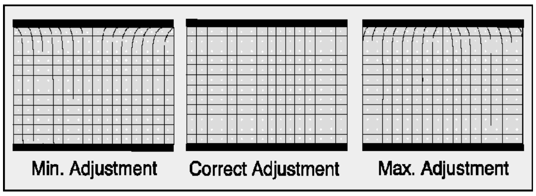
PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.

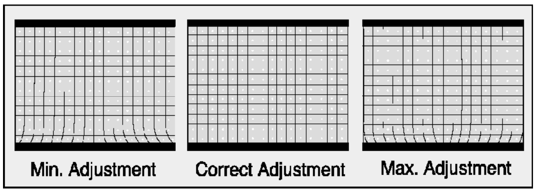
3. Set picture mode to VIVID

PROCEDURE

1. To adjust upper and lower linearity.
2. Adjust “TOPG” to straighten upper lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust “BTMG” to straighten lower lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust “TOPSL” and “BTMSL” of slice level.

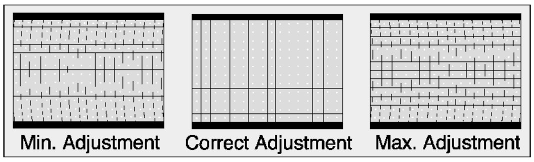
16.9.24. (1080i letter and split) / E-W PCC adjustment

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “SIDE” DATA so that the lines at left and right become vertical


Min. Adjustment
Correct Adjustment
Max. Adjustment

16.9.25. (1080i letter and split) / H-Width adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Adjust “H WID” DATA so that left width and right become in good balance (not too wide or narrow).

16.9.26. (1080i full) / H-Size, V-SIZE adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

1. Adjust “H WID” and “HPOS” DATA so that left width and right become in good balance (not too wide or narrow and centered).
2. Adjust “VEAMP” and “VRAS” DATA so that upper h and lower become in good balance (not too wide or narrow and centered)

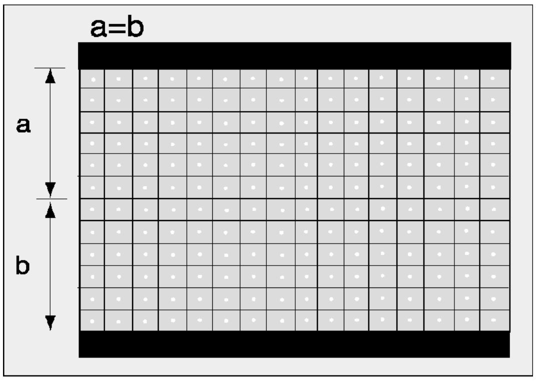
16.9.27. (1080i full) / Vertical linearity(V-C) and V-Position adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select DAC adjustment / "VRAS" and adjust pattern to center vertical position to the CRT center.
2. Adjust linearity data "V-C" so that interval of "a" is same as "b" (a= b).



3. If the v-position is not at the CRT center, adjust again.

16.9.28. (1080i full) / V-S, V-Size adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

1. Enter to service mode

2. Adjust “VAMP” to correct vertical size.
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)

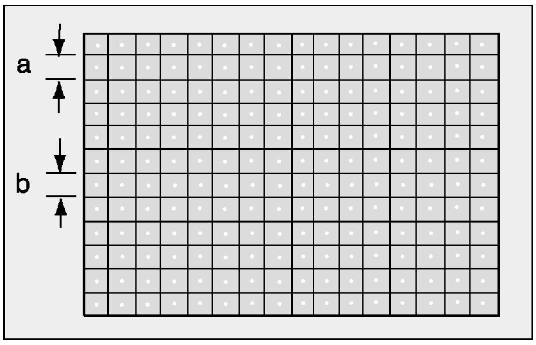
    - Increase “V-S” DATA by one step
    - Adjust “VEAMP” to correct vertical size.

    NOTE
    Repeat until b-a ± 1.5mm

4. Check a and b sizes, If b-a > -1.5mm (in top & bottom shortening case)

    - Decrease “V-S” by one step.
    - Adjust “VEAMP” to correct vertical size

    NOTE
    Repeat until b-a ± 1.5mm



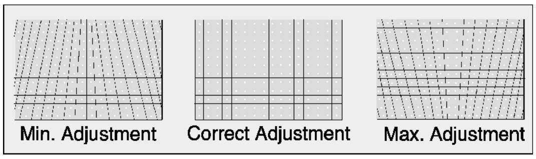
16.9.29. (1080i full) / Trapezoid adjustment

PREPARATION

1. Apply a 1080i pattern
2. Set mode to 4x3 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. **Enter service mode, select “TRAP” and adjust DATA so that lines at right and left are vertical like a solid line**


Min. Adjustment
Correct Adjustment
Max. Adjustment

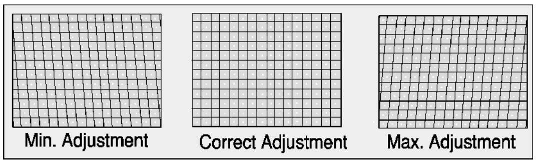
16.9.30. (1080i full) / Parallelogram adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Set mode to 4x3 in set-up menu**
3. **Normalize the picture settings.**
4. **Set picture mode to VIVID**

PROCEDURE

1. **Enter service mode, select “PARA” and adjust so that the lines at right and left are vertical like solid line.**


Min. Adjustment
Correct Adjustment
Max. Adjustment

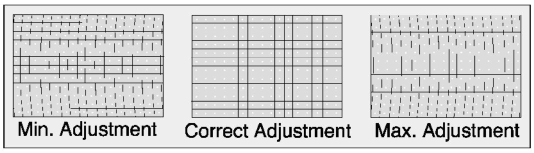
16.9.31. (1080i full) / E-W PCC adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Set mode to 4x3 in set-up menu**
3. **Normalize the picture settings.**
4. **Set picture mode to VIVID**

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “SIDE” DATA so that the lines at left and right become vertical


Min. Adjustment
Correct Adjustment
Max. Adjustment

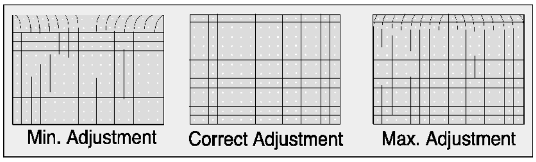
16.9.32. (1080i full) / Corner PCC adjustment

PREPARATION

1. Apply a 1080i pattern
2. Set mode to 4x3 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

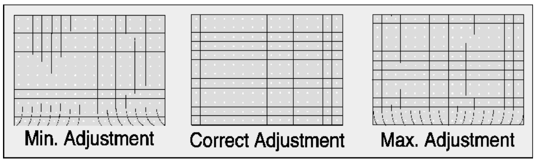
PROCEDURE

1. To adjust upper and lower linearity.
2. Adjust “TOPG” to straighten upper lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust “BTMG” to straighten lower lines

NOTE
If TOP-BOTTOM bending point is not so good, adjust “TOPSL” and “BTMSL” of slice level.


Min. Adjustment
Correct Adjustment
Max. Adjustment

16.10. MTS circuit adjustmens

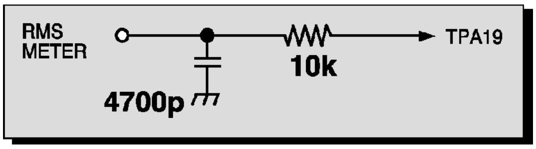
The MTS circuit adjustments require two steps:

1. **Input level adjustment.**
2. **Stereo separation adjustment.**

Input level adjustment / Service DAC adjustment (MTSIN)

PREPARATION

1. **Connect an RMS meter with filter jig as shown in figure to TPA19 (L_OUT)**



2. **Connect an RF signal generator to the RF antenna input.**

PROCEDURE

1. **Apply the following signal from the RF signal generator:**
   - **Video: 100 IRE flat field, 30% modulation.**
   - **Audio: 300Hz, 100% modulation, monaural (70 ±5dB, 75 Ω OPEN, P/S 10dB). Make sure that the 75 μ s pre-emphasis is OFF.**
2. **Adjust the MTS input level adjustment “MTSIN” data until the RMS voltage measured is 106 ± 6.0mVrms.**

Stereo separation adjustment (SEPAH)

PREPARATION

1. **Connect an R.F. signal generator to the RF antenna input.**
2. **Connect a scope to TPA20.**

PROCEDURE

1. **Select stereo mode in audio menu**
2. **Apply the following signal from the RF signal generator:**

- **Video: 100 IRE flat field, 30% modulation.**
- **Audio: 300Hz, 30% modulation, stereo (left only) (70±5dB, 75 Ω OPEN, P/S 10dB).**

NOTE
After setting 30% modulation with P.L. SW and N.R. SW OFF, turn P.L. SW and N.R. SW ON.

3. **In service mode, adjust the MTS Low-Level separation adjustment "SEPAL" data until the amplitude displayed on the scope is minimum.**
4. **Apply the following signal from the RF signal generator:**

- **Video: 100 IRE flat field, 30% modulation**
- **Audio: 3KHz, 30% modulation, stereo (left only) (70 ±5dB, 75 Ω OPEN, P/S 10dB).**

NOTE
After setting 30% modulation with P.L. SW and N.R. SW OFF, turn P.L. SW and N.R. SW ON.

5. **Adjust the MTS High-level separation adjustment "SEPAH" until the amplitude displayed on the scope is minimum.**
6. **Repeat above steps 2 through 5 until the amplitude is at minimum for both signals.**

16.11. Clock adjustment (CLOCK)

PREPARATION
Connect the frequency counter from TP96 / (A23 pin 21) to cold ground

PROCEDURE

1. **Turn the receiver "OFF" with the A.C. power applied.**
2. **Measure TP96 (A23 pin 21) for the frequency of the waveform and record the reading.**

NOTE

3. TP96 (A23 pin 21) measurement must have at least four digits of resolution following the decimal point. Example: 000.0000
4. Place the receiver into service mode for making electronic adjustment, select the clock adjustment DAC “CLOCK”.
5. Calculate and set “CLOCK” based on the following formula:

$$\boxed{CLOCK = 128 + (0.450)\times10^{6}\frac{\{(732.4220) - TP96[\mathrm{Hz}]\}}{(732.4220)}}$$

NOTE
TP96 (A23 pin 21) measurement will not change regardless of the value stored in CLOCK.

16.12. Service Adjustments Mechanical Controls

WIDTH CORRECTION ADJUSTMENT

Note
Perform this adjustment only when FBT is changed.

Preparation
Connect the DVM (digital voltage meter) (+) lead to connector D10 pin-2 or TPQ27; and (-) lead to connector D10 pin-4.

Procedure

1. Apply a black pattern.
2. Adjust R524 on D-Board so that the voltage on connector D10 pin-2 or TPQ27 is 1.8±0.1V on D-Board.

FOCUS (PART OF T551)

Preparation
Apply a crosshatch pattern with dots.

Procedure

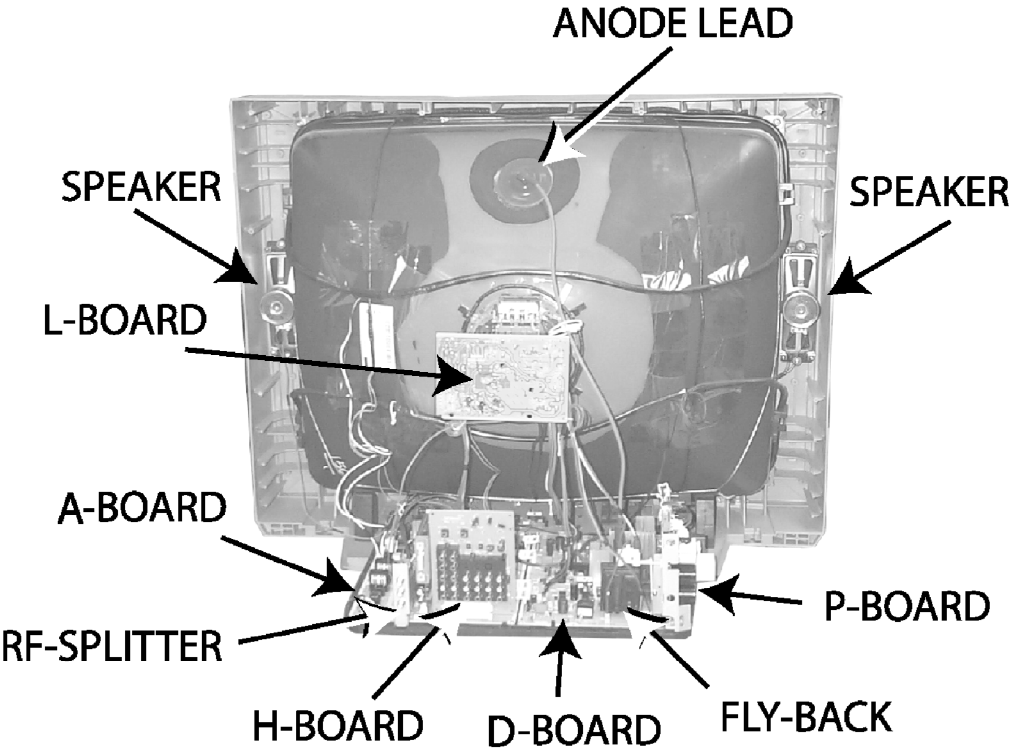
1. **Adjust the FOCUS control to obtain the sharpest and clearest dot pattern.**

   - F1 focus control adjusts vertically.
   - F2 focus control adjusts horizontally.
   - Use this two controls to adjust focus, until best overall picture is obtained.

17. Identification of components

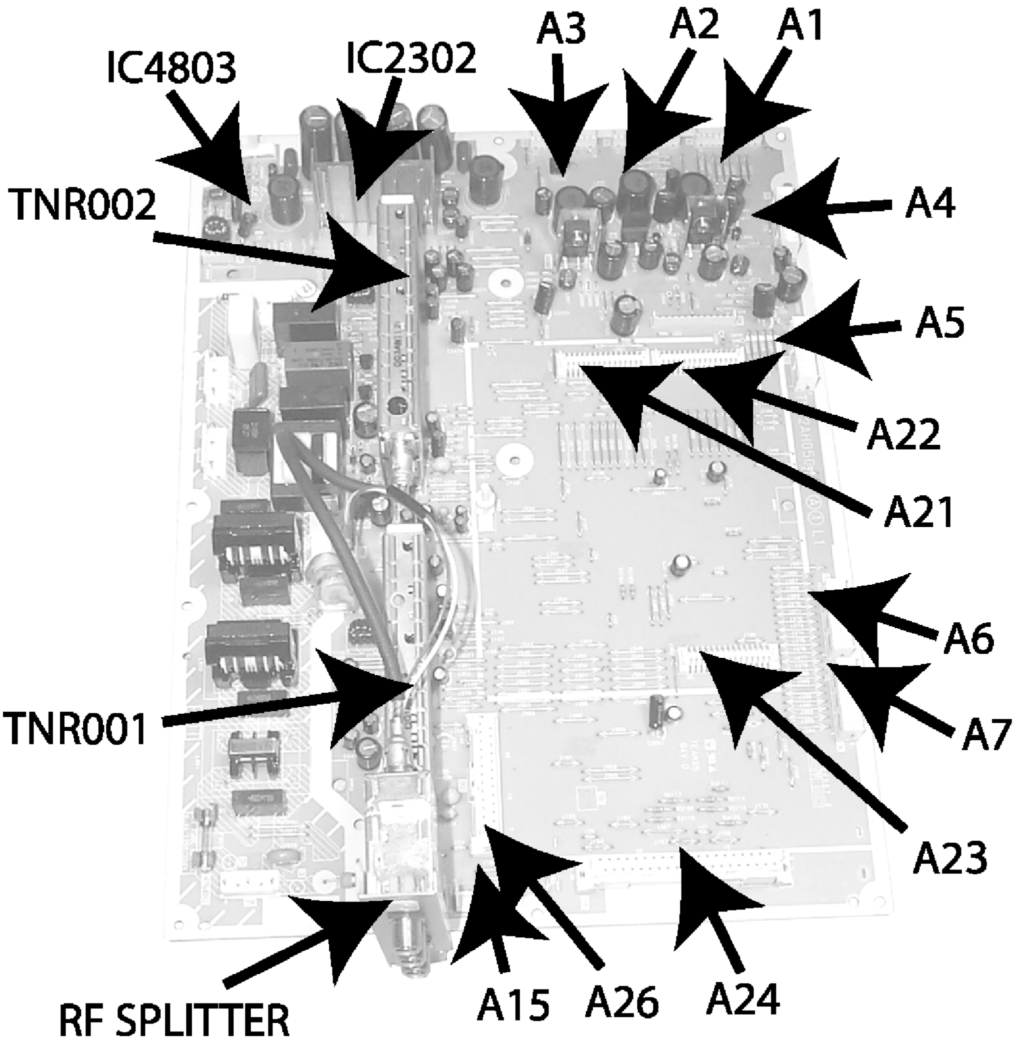
17.1. TV with back cover removed (may vary depending on model)

TV View withback cover removed


ANODE LEAD
SPEAKER
SPEAKER
L-BOARD
A-BOARD
P-BOARD
RF-SPLITTER
H-BOARD
D-BOARD
FLY-BACK

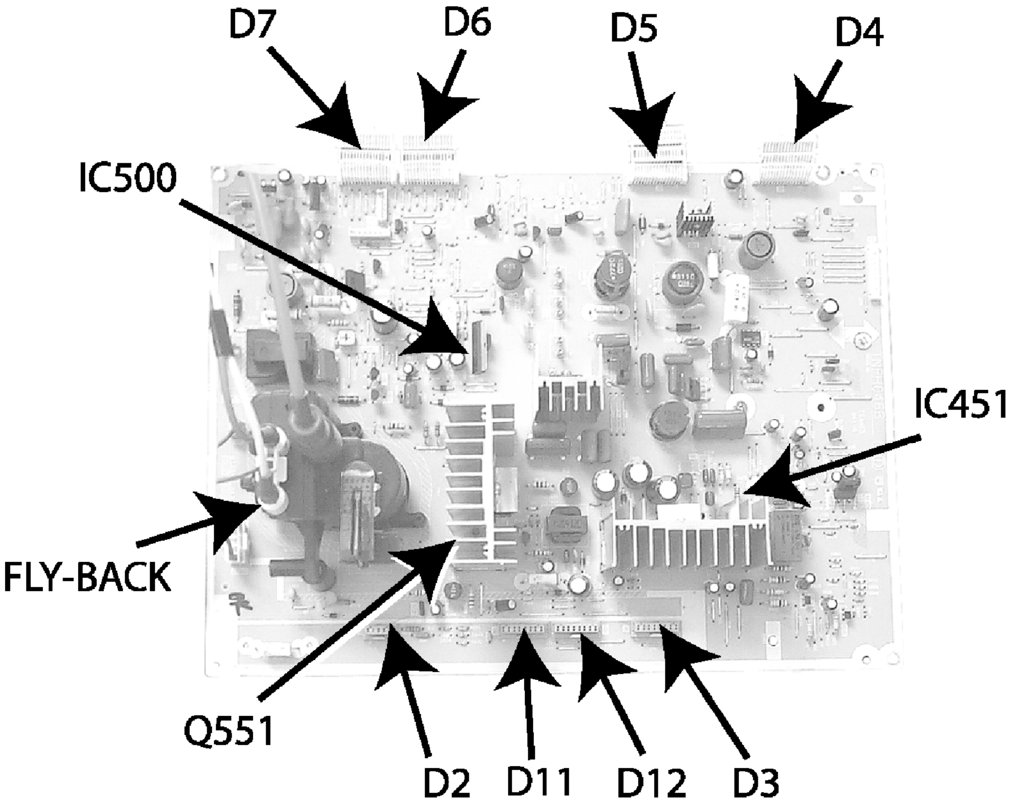
17.2. A-Board

A-Board view


A3
A2
A1
IC4803
IC2302
TNR002
A4
A5
A22
A21
A6
A7
TNR001
A23
A15
A26
A24
RF SPLITTER

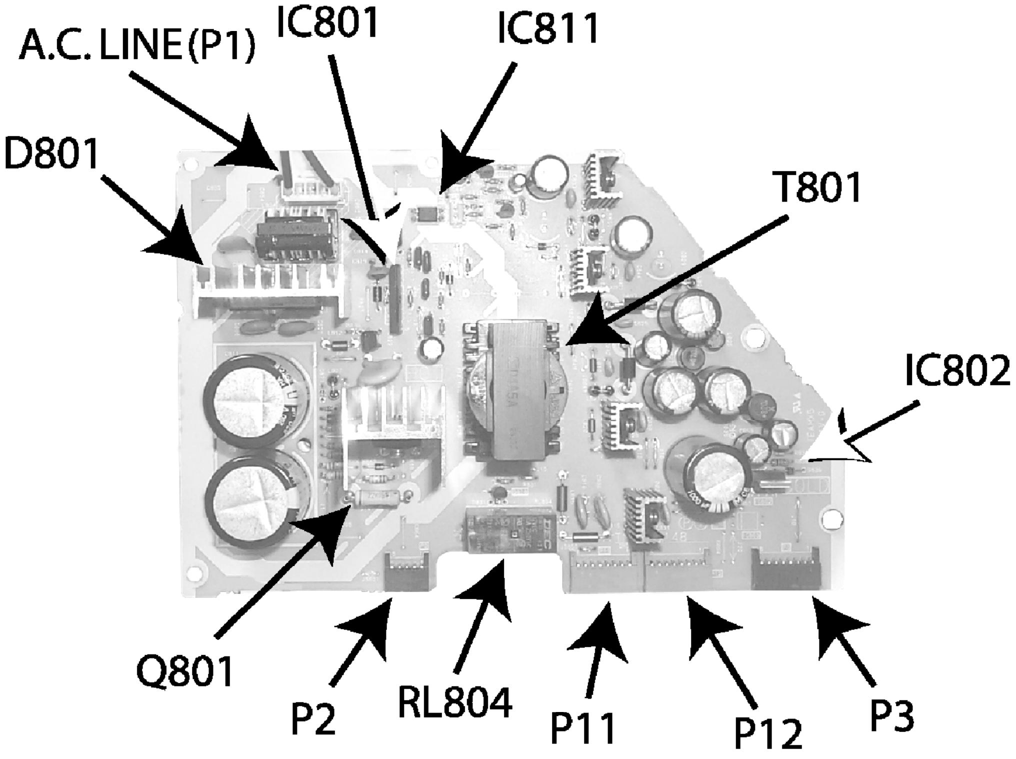
17.3. D-Board

D-Board view


D7
D6
D5
D4
IC500
IC451
FLY-BACK
Q551
D2
D11
D12
D3

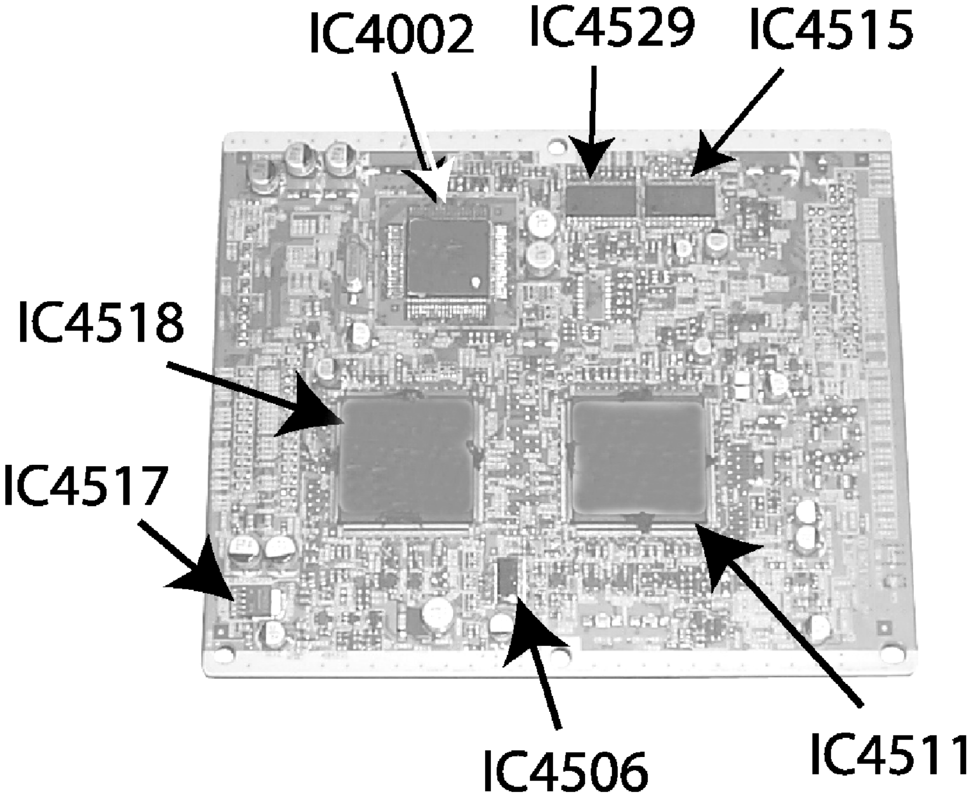
17.4. P-Board

P-Board view


A.C. LINE (P1)
IC801
IC811
D801
T801
IC802
Q801
P2
RL804
P11
P12
P3

17.5. DG-Board top

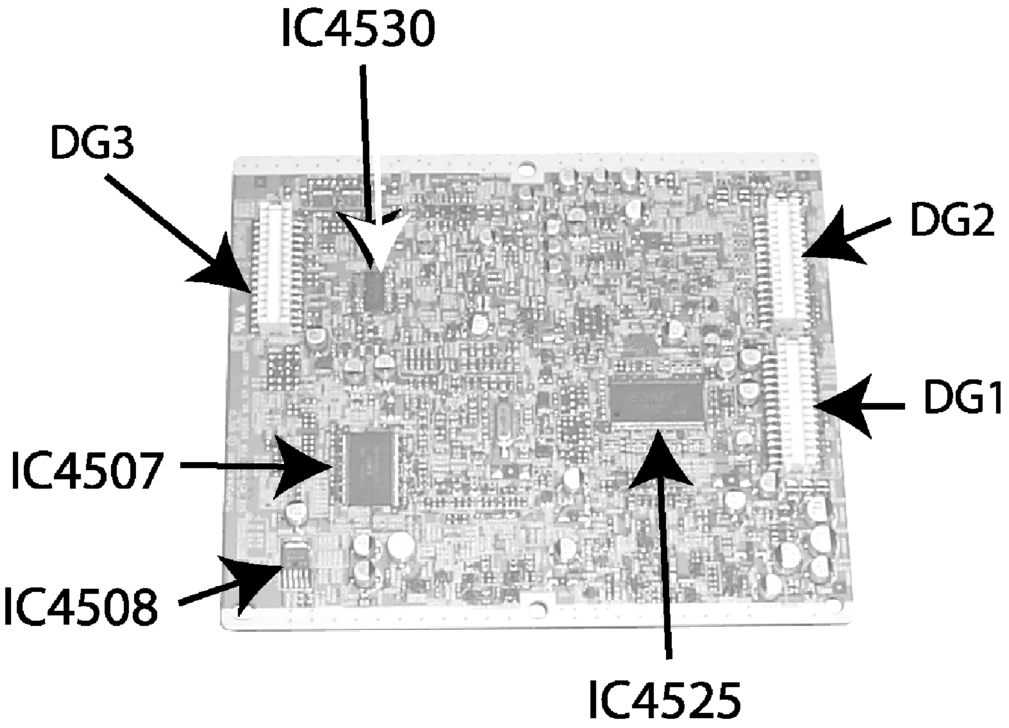
DG-Board top view


IC4002
IC4529
IC4515
IC4518
IC4517
IC4506
IC4511

NOTE:
Please ADD “4” to all IC part numbers, EXAMPLE: On board is IC506, then by adding “4” is IC4506

17.6. DG-Board bottom

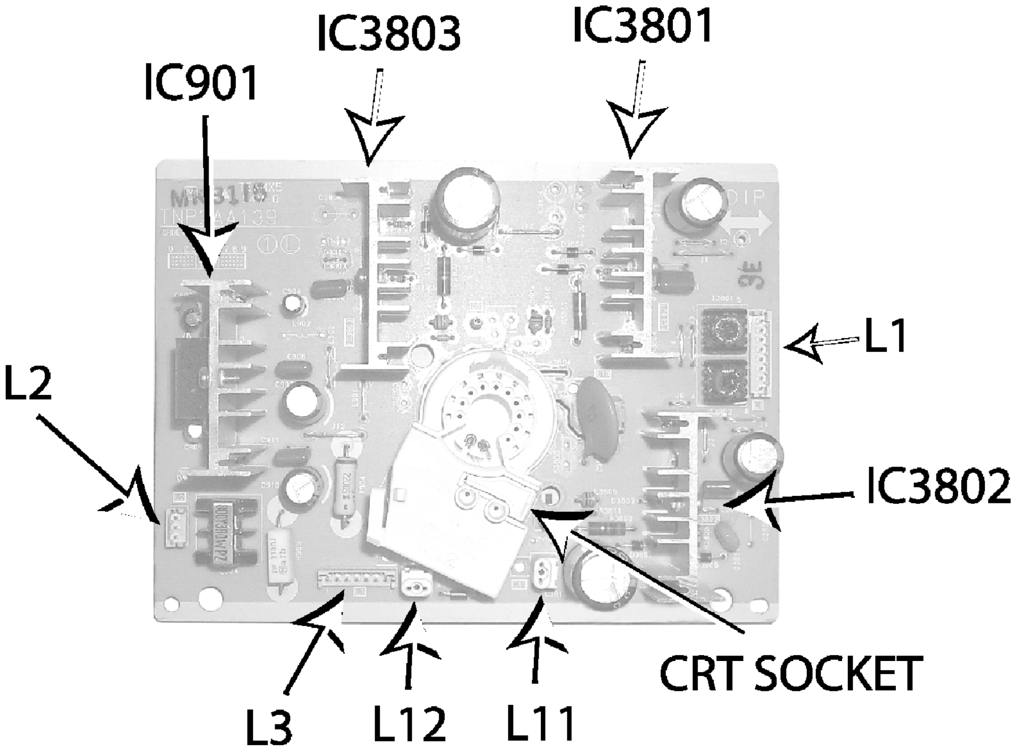
DG-Board bottom view


IC4530
DG3
DG2
DG1
IC4507
IC4508
IC4525

NOTE:
Please ADD “4” to all IC part numbers, EXAMPLE: On board is IC525, then by adding “4” is IC4525

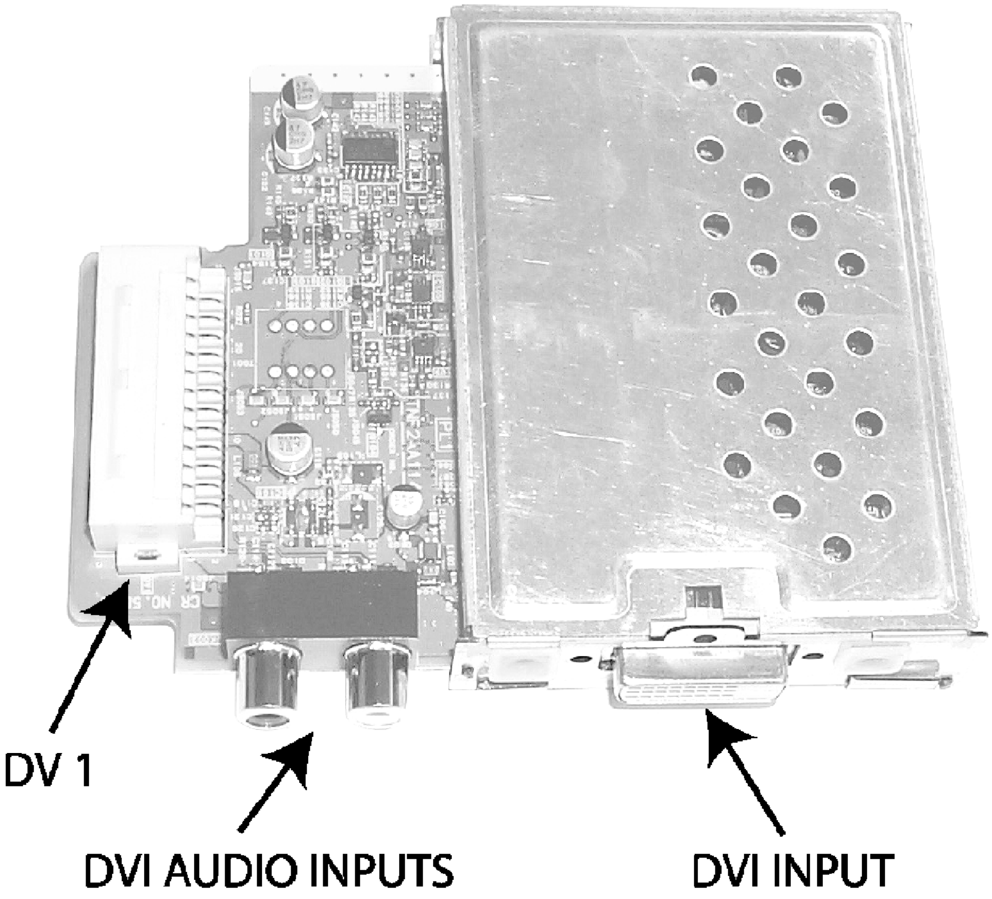
17.7. L-Board

L-Board view

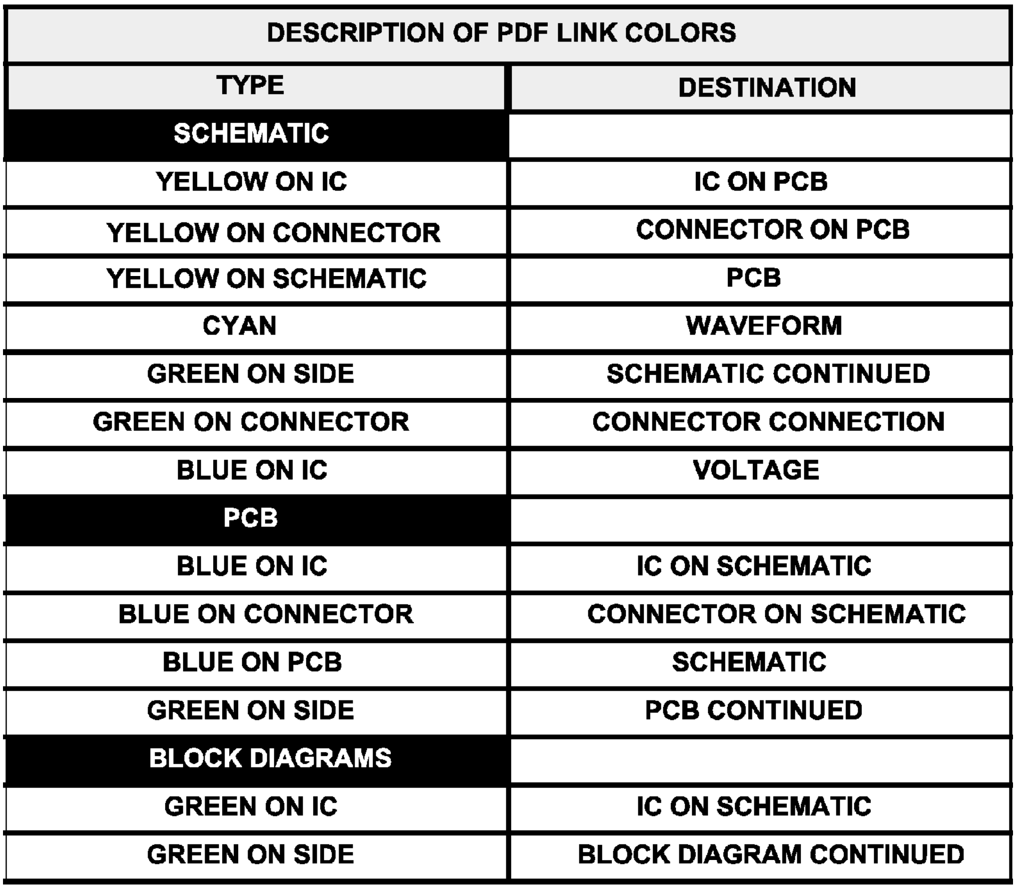

IC3803
IC3801
IC901
L1
L2
IC3802
CRT SOCKET
L3
L12
L11

17.8. DV-Board (only for HL models)

DV-Board view


DV 1
DVI AUDIO INPUTS
DVI INPUT

18. Reference of PDF links color



DESCRIPTION OF PDF LINK COLORS	
TYPE	DESTINATION
SCHEMATIC	
YELLOW ON IC	IC ON PCB
YELLOW ON CONNECTOR	CONNECTOR ON PCB
YELLOW ON SCHEMATIC	PCB
CYAN	WAVEFORM
GREEN ON SIDE	SCHEMATIC CONTINUED
GREEN ON CONNECTOR	CONNECTOR CONNECTION
BLUE ON IC	VOLTAGE
PCB	
BLUE ON IC	IC ON SCHEMATIC
BLUE ON CONNECTOR	CONNECTOR ON SCHEMATIC
BLUE ON PCB	SCHEMATIC
GREEN ON SIDE	PCB CONTINUED
BLOCK DIAGRAMS	
GREEN ON IC	IC ON SCHEMATIC
GREEN ON SIDE	BLOCK DIAGRAM CONTINUED

19. Conductor Views

19.1. A-Board 1 of 2

19.2. A-Board 2 of 2

19.3. D-Board 1 of 2

19.4. D-Board 2 of 2

19.5. DG-Board top 1 of 4

19.6. DG-Board top 2 of 4

19.7. DG-Board top 3 of 4

19.8. DG-Board top 4 of 4

19.9. DG-Board bottom 1 of 4

19.10. DG-Board bottom 2 of 4

19.11. DG-Board bottom 3 of 4

19.12. DG-Board bottom 4 of 4

19.13. DV-Board top 1 of 2

19.14. DV-Board top 2 of 2

19.15. DV-Board bottom 1 of 2

19.16. DV-Board bottom 2 of 2

19.17. P-Board

19.18. L-Board

19.19. H-Board

19.20. K-Board

19.21. G-Board HL 1 of 2

19.22. G-Board HL 2 of 2

19.23. G-Board HXC 1 of 2

19.24. G-Board HXC 2 of 2

20. Block Diagrams

20.1. Audio Block Diagram

20.2. Video Block Diagram

21. Schematic Diagrams

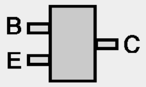
21.1. Schematic notes in english

Notes:

IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

CHIP TRANSISTOR LEAD DESIGNATION



SCHEMATIC NOTES

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ●; Test point but no pin ○.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏛ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

VOLTAGE MEASUREMENTS

1. Voltage measurement:
   - AC input to the Receiver is 120V. NTSC (HD, 1125i & 525P when applicable) signal generator is connected to the antenna of the Receiver. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min.
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

WAVEFORM MEASUREMENTS

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

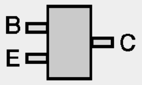
21.2. Schematic notes in spanish

Notas

NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*



NOTAS DE LOS DIAGRAMAS

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ⫯ Los puntos de prueba fuera de los componentes se indican con ⫯.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

MEDICIÓN DE VOLTAJES

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: SI no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

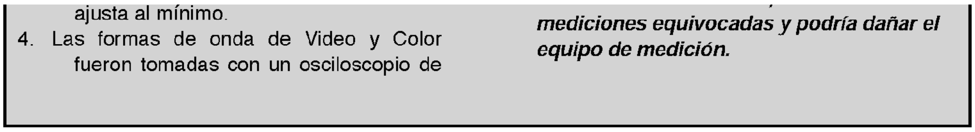
MEDICIÓN DE FORMAS DE ONDA

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.

banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.

5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán



ajusta al mínimo.

4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de

mediciones equivocadas y podría dañar el equipo de medición.

21.3. A-Board schematic 1 of 3

21.4. A-Board schematic 2 of 3

21.5. A-Board schematic 3 of 3

21.6. D-Board schematic 1 of 4

21.7. D-Board schematic 2 of 4

21.8. D-Board schematic 3 of 4

21.9. D-Board schematic 4 of 4

21.10. DG-Board schematic 1 of 6

21.11. DG-Board schematic 2 of 6

21.12. DG-Board schematic 3 of 6

21.13. DG-Board schematic 4 of 6

21.14. DG-Board schematic 5 of 6

21.15. DG-Board schematic 6 of 6

21.16. DV-Board schematic 1 of 3

21.17. DV-Board schematic 2 of 3

21.18. DV-Board schematic 3 of 3

21.19. P-Board schematic 1 of 2

21.20. P-Board schematic 2 of 2

21.21. L-Board schematic 1 of 2

21.22. L-Board schematic 2 of 2

21.23. H-Board schematic 1 of 2

21.24. H-Board schematic 2 of 2

21.25. K-Board schematic

21.26. G-Board (HL) schematic 1 of 2

21.27. G-Board (HL) schematic 2 of 2

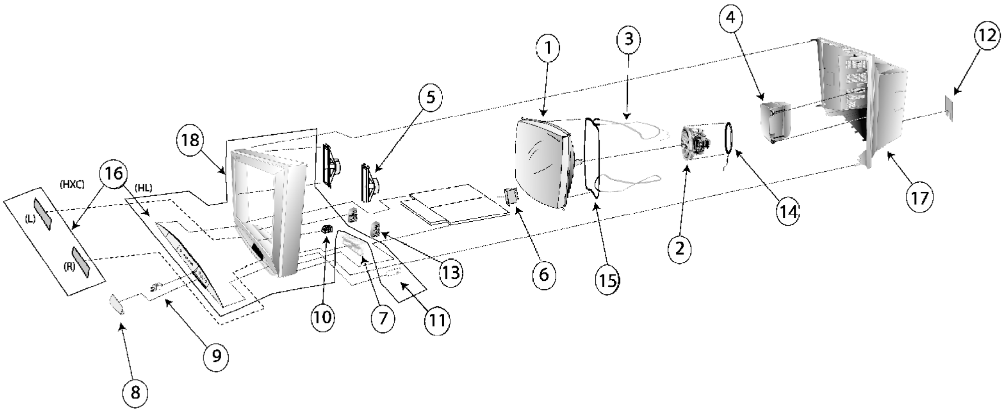
21.28. G-Board (HXC) schematic 1 of 2

21.29. G-Board (HXC) schematic 2 of 2

21.30. Voltages

21.31. Waveforms

22. Parts Location


4
1
3
12
5
18
(HXC)
16
(HL)
(L)
(R)
14
17
13
6
15
2
10
7
11
9
8

NOTE:
Appearance may vary depending on the model

23. Parts list

23.1. Description of abbreviations guide

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

Abbreviation of part name and description

1. Resistor

Example :
ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

2. Capacitor

Example :
ECKF1H103ZF **C** 0.01µF, **Z**, 50V
Type Allowance

Type	Allowance
C : Carbon	F : ± 1%
F : Fuse	G : ± 2%
M : Metal Oxide Metal Film	J : ± 5% K : ± 10%
S : Solid	M : ± 20%
W : Wire Wound	

Type	Allowance
C : Carbon	C : ± 0.25pF
E : Electrolytic	D : ± 0.5pF
P : Polyester Polypropylene	F : ± 1pF G : ± 3%
T : Tantalum	J : ± 5%
	K : ± 10%
	L : ± 15%
	M : ± 20%
	P : ± 100%, -0%
	Z : ± 80%, -20%

23.2. Parts list

Ref. No.	Part No.	Part Name & Description	Remarks
		CAPACITORS	
C038	EEUFC1A471B	CAP E 470UF-10V	
C039	ECA1HM4R7B	CAP E 4.7UF-50V	
C041	ECA1HM2R2B	CAP E 2.2UF-50V	
C042	ECA1VM470B	CAP E 47UF/35V	
C043	ECA1HM4R7B	CAP E 4.7UF-50V	
C045	ECA1HM2R2B	CAP E 2.2UF-50V	
C047	ECA1HM010B	CAP E 1UF-50V	
C050	TCJ2VC1H101J	CAP C 100PF-J-50V	
C051	TCJ2VC1H101J	CAP C 100PF-J-50V	
C058	ECA1HMR22B	CAP E .22UF-50V	
C059	ECA1HMR22B	CAP E .22UF-50V	
C060	ECA1HM4R7B	CAP E 4.7UF-50V	
C405	ECA1HM102E	CAP E 1000UF-50V	
C406	ECQV1H105JL3	CAP P 1.0UF-J-50V	
C407	ECKR1H103ZF5	CAP C .01UF-Z-50V	
C408	ECA1VM102E	CAP E 1000UF-35V	
C409	ECA1VM102E	CAP E 1000UF-35V	
C411	ECQB1H472JF3	CAP P 4700PF-J-50V	
C412	ECQB1224KF3	CAP P .22UF-K-100V	
C413	ECA1HM010B	CAP E 1UF-50V	
C414	ECQB1H272JF3	CAP P 2700PF-J-50V	
C415	ECQB1473KF3	CAP P .047UF-K-100V	
C416	ECQB1H472JF3	CAP P 4700PF-J-50V	

Ref. No.	Part No.	Part Name & Description	Remarks
C419	**EEUNA1A470B**	**CAP E 47UF-125V**	
C420	**ECA1CM101B**	**CAP E 100UF/16V**	
C421	**ECA1CM101B**	**CAP E 100UF/16V**	
C422	**ECA1HM010B**	**CAP E 1UF-50V**	
C434	**ECA1HM100B**	**CAP E 10UF/50V**	
C438	**ECQB1H102JF3**	**CAP P 1000PF-J-50V**	
C439	**TCJ2VB1H103K**	**CAP C .01UF-K-50V**	
C440	**ECA1HM100B**	**CAP E 10UF/50V**	
C457	**ECEA1EN4R7UB**	**CAP E 4.7UF-25V**	
C501	**ECA1VHG101B**	**CAP E 100UF-35V**	
C502	**ECQV1H104JL3**	**CAP P .10UF-J-50V**	
C503	**ECKR2H102KB5**	**CAP C 1000PF-K-500V**	
C506	**ECA1CM471B**	**CAP E 470UF-16V**	
C509	**ECKR3A222KBP**	**CAP C .0022UF-K-1KV**	
C510	**TCJ2VC1H221J**	**CAP C 220PF-J-50V**	
C511	**ECWH20562JVB**	**CAP P 5600PF-J-2KV**	⚠
C513	**ECQF6103JZH**	**CAP P .010UF-J-630V**	⚠
C514	**ECWH20272JVY**	**CAP P 2700PF-J-2KV**	⚠
C515	**ECKR3A222KBP**	**CAP C .0022UF-K-1KV**	
C516	**ECWF2224JSR**	**CAP M .22UF-J-200V**	⚠
C517	**ECWF2684JSR**	**CAP M .26UF-J-200V**	⚠
C518	**ECKW3D681KBR**	**CAP C 680PF-K-2KV**	⚠
C519	**ECKW3D681KBR**	**CAP C 680PF-K-2KV**	⚠
C520	**ECQB1H183JF3**	**CAP P .018UF-J-50V**	⚠
C521	**ECWF2224JSR**	**CAP M .22UF-J-200V**	
C522	**ECWH20202JVY**	**CAP P 2000PF-J-2KV**	⚠
C523	**ECWH20562JVB**	**CAP C 5600PF-J-2KV**	⚠
C524	**ECQB1224JF3**	**CAP P .22UF-J-100V**	
C525	**ECA1HM470B**	**CAP E 47UF-50V**	
C526	**ECA2EM470E**	**CAP E 47UF-250V**	
C527	**ECKR2H102KB5**	**CAP C 1000PF-K-500V**	
C528	**ECA1HM4R7B**	**CAP E 4.7UF-50V**	⚠
C530	**ECQE2155JFB**	**CAP P 1.5UF-J-200V**	
C531	**ECA160V33UE**	**CAP E 33UF/160V**	
C532	**ECQF6472JZH**	**CAP P .0047UF-J-630V**	⚠
C535	**ECA1HHG471E**	**CAP E 470UF-50V**	
C536	**ECEA1HN100UB**	**CAP E 10UF/50V**	
C537	**ECQB1H473JF3**	**CAP P .047UF-J-50V**	
C538	**ECA1CM471B**	**CAP E 470UF-16V**	
C539	**ECA1CM471B**	**CAP E 470UF-16V**	
C541	**ECQE2333JFB**	**CAP P .033UF-J-200V**	⚠
C573	**ECQB1H104JF3**	**CAP P .10UF-J-50V**	
C574	**ECA1CM470B**	**CAP E 47UF/16V**	
C575	**ECKR1H103ZF5**	**CAP C .01UF-Z-50V**	
C701	**ECQB1H182JF3**	**CAP P 1800PF-J-50V**	
C704	**ECQB1H152JF3**	**CAP P 1500PF-J-50V**	
C705	**TCJ2VC1H681J**	**CAP C 680PF-J-50V**	
C706	**ECKW3D271JBP**	**CAP C 270PF-J-2KV**	
C709	**ECQE1106KFB**	**CAP P 1000PF-K-1KV**	
C712	**ECKR1H221KB5**	**CAP C 220PF-K-50V**	

Ref. No.	Part No.	Part Name & Description	Remarks
C713	ECKR1H221KB5	CAP C 220PF-K-50V	
C714	ECA1HM2R2B	CAP E 2.2UF-50V	
C759	ECQM2104KZW	CAP P .1UF-K-200V	
C801	ECQU2A104BN9	CAP P .10UF-B-250V	⚠
C802	ECQU2A823BN9	CAP P .082UF-B-250V	⚠
C803	ECQU2A823BN9	CAP P .082UF-B-250V	⚠
C804	ECQU2A823BN9	CAP P .082UF-B-250V	⚠
C805	ECKW2H472PU7	CAP C 4700PF-P-500V	⚠
C806	ECKW2H472PU7	CAP C 4700PF-P-500V	⚠
C807	ECKW2H472PU7	CAP C 4700PF-P-500V	⚠
C808	ECQB1H102JF3	CAP P 1000PF-J-50V	
C809	ECQB1H333JF3	CAP P .033UF-J-50V	
C810	EC0S2DA821DB	CAP E 820UF-200V	⚠
C811	EC0S2DA821DB	CAP E 820UF-200V	⚠
C812	ECA1CM471B	CAP E 470UF-16V	
C813	ECA1HM010B	CAP E 1UF-50V	
C814	ECKW2H472PU7	CAP C 4700PF-P-500V	⚠
C815	ECA1EM471B	CAP E 470UF-25V	
C816	ECKW3A272KBP	CAP C 2700PF-K-1KV	
C817	ECQB1H332JF3	CAP P 3300PF-J-50V	
C819	TACCQ221T50V	CAP C 220PF/50V	
C820	ECA1EHG221B	CAP E 220UF-25V	
C821	ECKW3D272KBP	CAP C 2700PF-K-2KV	
C822	ECQB1H393JF3	CAP P .039UF-J-50V	
C823	ECQB1H222JF3	CAP P 2200PF-J-50V	
C826	ECA1VM221B	CAP E 220UF-35V	
C827	ECQB1H333JF3	CAP P .033UF-J-50V	
C828	ECKR3A331KBP	CAP C 330PF-K-1KVDC	
C830	EETHC2C102H	CAP E 1000UF-160V	⚠
C831	ECKR3A102KBP	CAP C 1000PF-K-1KV	
C832	ECA1VHG102E	CAP E 1000UF/35V	
C833	ECKR3A471KBP	CAP C 470PF-K-1KV	
C834	EEUFC1V222E	CAP E 2200UF-35V	
C838	EEUFC1E272E	CAP E 2700UF-25V	
C839	ECKR3A151KBP	CAP C 150PF-K-1KV	
C840	ECA1EMH471B	CAP E 470UF-25V	
C841	ECA1EM222B	CAP E 2200UF-25V	
C842	ECKR3A331KBP	CAP C 330PF-K-1KVDC	
C843	ECA1VHG102E	CAP E 1000UF/35V	
C844	ECKR3A471KBP	CAP C 470PF-K-1KV	
C845	ECA1CM101B	CAP E 100UF/16V	
C846	ECA1HM010B	CAP E 1UF-50V	
C847	ECA1VM470B	CAP E 47UF/35V	
C848	ECA1CM101B	CAP E 100UF/16V	
C850	EEUFC1E272E	CAP E 2700UF-25V	
C851	ECA1CM221B	CAP E 10UF-16V	
C856	ECQU2A103MNB	CAP P .010UF-M-250V	⚠
C857	TCJ2VB1H103K	CAP C .01UF-K-50V	
C859	ECA1VHG471B	CAP E 470UF-35V	
C860	ECKCNA222MEB	CAP C 2200PF-M-125V	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
C861	ECKCNA222MEB	CAP C 2200PF-M-125V	⚠
C876	ECA1EM471B	CAP E 470UF-25V	
C877	EEUFC1A471B	CAP E 470UF-10V	
C878	ECA1EM471B	CAP E 470UF-25V	
C879	EEUFC1A471B	CAP E 470UF-10V	
C880	TCJ2VB1H103K	CAP C .01UF-K-50V	
C885	ECA1VM471B	CAP E 470UF-35V	
C886	EEUFC1C471B	CAP E 470UF-16V	
C887	ECA1CM471B	CAP E 470UF-16V	
C888	ECA1EM101B	CAP E 100UF-25V	
C889	ECA1CM101B	CAP E 100UF/16V	
C890	ECA1CM221B	CAP E 10UF-16V	
C891	TCJ2VF1H103Z	CAP C .01UF-Z-50V	
C892	ECA0JM221B	CAP E 220UF-6.3V	
C893	TCJ2VF1H103Z	CAP C .01UF-Z-50V	
C894	ECA1VM101B	CAP E 100UF-35V	
C895	ECA1CM221B	CAP E 10UF-16V	
C896	TCJ2VF1H103Z	CAP C .01UF-Z-50V	
C897	ECA1EM471B	CAP E 470UF-25V	
C898	TCJ2VB1H103K	CAP C .01UF-K-50V	
C899	TCJ2VB1H103K	CAP C .01UF-K-50V	
C901	ECJ2VF1H103Z	CAP C .01UF-Z-50V	
C902	ECA1CM101B	CAP E 100UF/16V	
C904	ECA1CM101B	CAP E 100UF/16V	
C906	ECA1CM101B	CAP E 100UF/16V	
C907	ECA2EM220E	CAP E 22UF-250V	
C908	ECQE2103KF3	CAP P .010UF-K-200V	
C909	ECA1CM101B	CAP E 100UF/16V	
C910	ECA2CM100B	CAP E 10UF-160V	
C911	ECQE2103KF3	CAP P .010UF-K-200V	
C1024	TCJ2VF1H103Z	CAP C .01UF-Z-50V	
C1025	ECA0JM222B	CAP E 2200UF-6.3V	
C1051	ECJ2VF1H103Z	CAP C .01UF-Z-50V / CT-32HL43G/UG, / CT-36HL43G/UG	
C1051	TCJ2VB1H103K	CAP C .01UF-K-50V / CT-32HXC43G/UG	
C1052	ECA1AM470B	CAP E 47UF-10V / CT-32HL43G/UG / CT-36HL43G/UG	
C1052	ECA1HM470B	CAP E 47UF-50V / CT-32HXC43G/UG	
C1504	ECQB1H103JF3	CAP P .01UF-J-50V	
C1505	ECA1CM470B	CAP E 47UF/16V	
C1506	TCJ2VF1H102Z	CAP C 1000PF-Z-50V	
C1507	ECA1CM220B	CAP E 22UF-16V	
C1508	ECKW3D151KBP	CAP C 150PF-K-2KV	
C1509	ECQM6223KZW	CAP P .022UF-K-600V	
C1510	ECQM4223KZW	CAP P .022UF-K-400V	
C1511	ECA1HM010B	CAP E 1UF-50V	
C1512	ECKW3D102KBP	CAP C 1000PF-K-2KV	
C1513	ECKW3D471KBP	CAP C 470PF-K-2KVDC	
C1515	ECKR3A152KBP	CAP C 1500PF-K-1KVDC	
C1516	ECKR3A561KBP	CAP C 560PF-K-1KV	
C1517	ECKR3A151KBP	CAP C 150PF-K-1KV	
C1518	ECKR3A102KBP	CAP C 1000PF-K-1KV	
C1519	ECA1VM470B	CAP E 47UF/35V	
C1520	ECA1HM100B	CAP E 10UF/50V	
C1521	ECA0JM331B	CAP E 330UF-6.3V	
C2202	ECEA1HKA2R2B	CAP E 2.2UF-50V	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
C2203	ECEA1HKA4R7B	CAP E 4.7UF-50V	
C2204	AP106K016CAE	CAP T 10UF/16V	
C2205	ECA1HM010B	CAP E 1UF-50V	
C2206	ECQB1H223JF3	CAP P .022UF-J-50V	
C2207	AP335K016CAE	CAP T 3.3UF/16V	
C2208	ECJ2VB1C104K	CAP C .1UF-K-16V	
C2209	ECJ2VB1C104K	CAP C .1UF-K-16V	
C2210	ECJ2VB1C104K	CAP C .1UF-K-16V	
C2211	ECA1HM100B	CAP E 10UF/50V	
C2212	ECQB1H473JF3	CAP P .047UF-J-50V	
C2215	ECA1CM101B	CAP E 100UF/16V	
C2218	ECA1HMR47B	CAP E .47UF-50V	
C2303	ECA1EM101B	CAP E 100UF-25V	
C2304	TCJ2VF1H103Z	CAP C .01UF-Z-50V	
C2325	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2330	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2331	ECA1HM100B	CAP E 10UF/50V	
C2332	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2333	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2334	TCJ2VF1H103Z	CAP C .01UF-Z-50V	
C2342	TCJ2VB1H333K	CAP C .033UF-K-50V	
C2343	ECEA1CN100UB	CAP E 10UF-16V	
C2344	ECQB1H224JF3	CAP P .22UF-J-50V	
C2345	EEUFC1E222E	CAP E 2200UF-25V	
C2346	TCJ2VB1H561K	CAP C 560PF-K-50V	
C2347	ECJ3VB1H104K	CAP C .1UF-K-50V	
C2348	ECA1HM100B	CAP E 10UF/50V	
C2349	ECEA1CN100UB	CAP E 10UF-16V	
C2351	F1J1C225A083	CAP C 2.2UF-Z-16V	
C2352	EEUFC1E222E	CAP E 2200UF-25V	
C2353	EEUFC1E222E	CAP E 2200UF-25V	
C2354	TCJ2VB1H471K	CAP C 470PF-K-50V	
C2355	TCJ2VC1H270J	CAP C 27PF-J-50V	
C2356	TCJ2VB1H471K	CAP C 470PF-K-50V	
C2357	TCJ2VB1H331K	CAP C 330PF-K-50V	
C2358	ECJ3VB1H104K	CAP C .1UF-K-50V	
C2359	TCJ2VB1H331K	CAP C 330PF-K-50V	
C2360	ECJ3VB1H104K	CAP C .1UF-K-50V	
C2361	TCJ2VB1H471K	CAP C 470PF-K-50V	
C2362	TCJ2VB1H471K	CAP C 470PF-K-50V	
C2363	TCJ2VB1H682K	CAP C 6800PF-K-50V	
C2364	ECJ3VB1H104K	CAP C .1UF-K-50V	
C2365	ECJ3VB1H104K	CAP C .1UF-K-50V	
C2366	EEUFC1E222E	CAP E 2200UF-25V	
C2367	ECQB1H224JF3	CAP P .22UF-J-50V	
C2368	TCJ2VB1H333K	CAP C .033UF-K-50V	
C2369	TCJ2VB1H561K	CAP C 560PF-K-50V	
C2370	ECEA1HN100UB	CAP E 10UF/50V	
C2371	ECEA1HN100UB	CAP E 10UF/50V	
C2373	TCJ2VB1H682K	CAP C 6800PF-K-50V	
C2374	ECEA1HN100UB	CAP E 10UF/50V	
C2375	ECEA1HN100UB	CAP E 10UF/50V	
C2378	ECJ2VF1H104Z	CAP C .1UF-Z-50V	
C2380	ECA1HM010B	CAP E 1UF-50V	

Ref. No.	Part No.	Part Name & Description	Remarks
C2451	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2452	TCJ2VB1H332K	CAP C .0033UF-K-50V	
C2453	TCJ2VB1H333K	CAP C .033UF-K-50V	
C2455	TCJ2VB1H472K	CAP C 4700PF-K-50V	
C2456	ECJ2VB1C104K	CAP C .1UF-K-16V	
C2457	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2458	ECJ2VB1C104K	CAP C .1UF-K-16V	
C2459	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2460	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2461	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2462	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2463	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2464	ECJ2VB1C104K	CAP C .1UF-K-16V	
C2465	ECJ2VB1C104K	CAP C .1UF-K-16V	
C2466	TCJ2VB1H472K	CAP C 4700PF-K-50V	
C2468	TCJ2VB1H333K	CAP C .033UF-K-50V	
C2469	TCJ2VB1H332K	CAP C .0033UF-K-50V	
C2470	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C2474	ECA1CM101B	CAP E 100UF/16V	
C2475	TCJ2VB1H103K	CAP C .01UF-K-50V	
C3001	ECA1CM470B	CAP E 47UF/16V	
C3002	TCJ2VF1H103Z	CAP C .01UF-Z-50V	
C3004	ECA1CM470B	CAP E 47UF/16V	
C3010	ECEA1CKA101B	CAP E 100UF-16V	
C3011	ECJ2VF1C104Z	CAP C .1UF-Z-16V	
C3012	ECJ2VB1C104K	CAP C .1UF-K-16V	
C3013	ECEA1CKA101B	CAP E 100UF-16V	
C3014	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3015	ECJ2VB1C104K	CAP C .1UF-K-16V	
C3016	ECJ2VB1C104K	CAP C .1UF-K-16V	
C3017	ECJ2VB1C104K	CAP C .1UF-K-16V	
C3018	ECEA1CKA100B	CAP E 10UF-16V	
C3020	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V / CT-32HL43G/UG, CT-36HL43G/UG	
C3021	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V / CT-32HL43G/UG, CT-32HL43G/UG	
C3031	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3032	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3033	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3034	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3035	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3036	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3037	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3038	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3039	TCJ2VB1H103K	CAP C .01UF-K-50V	
C3042	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3043	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3044	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3045	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3046	TCJ2VB1H103K	CAP C .01UF-K-50V	
C3049	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3050	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3051	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3052	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	
C3054	TCJ2VB1H152K	CAP C 1500PF-K-50V	
C3055	ECJ2VF1C105Z	CAP C 1.0UF-Z-16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C3056	**TCJ2VF1H103Z**	**CAP C .01UF-Z-50V**	
C3057	**TCJ2VB1H152K**	**CAP C 1500PF-K-50V**	
C3058	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3059	**ECA1CM471B**	**CAP E 470UF-16V**	
C3100	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3102	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3104	**TCJ2VF1H103Z**	**CAP C .01UF-Z-50V**	
C3106	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3109	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3111	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3115	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3117	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3121	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V / CT-32HL43G, CT-32HXC43G/UG / CT-36HL43G/ UG**	
C3126	**ECJ2YB1A105K**	**CAP C 1.0UF-K-125V**	
C3127	**ECJ2YB1A105K**	**CAP C 1.0UF-K-125V**	
C3128	**ECJ2YB1A105K**	**CAP C 1.0UF-K-125V**	
C3129	**ECJ2YB1A105K**	**CAP C 1.0UF-K-125V**	
C3132	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3154	**ECA1HM010B**	**CAP E 1UF-50V**	
C3155	**ECA1HM010B**	**CAP E 1UF-50V**	
C3158	**TCJ2VB1H152K**	**CAP C 1500PF-K-50V / CT-32HXC43G/UG**	
C3159	**TCJ2VB1H152K**	**CAP C 1500PF-K-50V / CT-32HXC43G/UG**	
C3160	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3161	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3162	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3163	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3164	**TCJ2VB1H102K**	**CAP C 1000PF-K-50V**	
C3165	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3166	**TCJ2VB1H102K**	**CAP C 1000PF-K-50V**	
C3167	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3168	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3170	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3172	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3173	**TCJ2VB1H102K**	**CAP C 1000PF-K-50V**	
C3174	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3175	**TCJ2VB1H102K**	**CAP C 1000PF-K-50V**	
C3182	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3183	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3184	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3185	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3186	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3187	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3188	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3189	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3190	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3191	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3192	**TCJ2VB1H102K**	**CAP C 1000PF-K-50V**	
C3193	**ECJ2VF1C105Z**	**CAP C 1.0UF-Z-16V**	
C3194	**TCJ2VB1H102K**	**CAP C 1000PF-K-50V**	
C3801	**ECQE2104KFW**	**CAP P .10UF-K-200V**	
C3802	**ECQE2104KFW**	**CAP P .10UF-K-200V**	
C3803	**ECQE2104KFW**	**CAP P .10UF-K-200V**	
C3807	**ECA2EM470E**	**CAP E 47UF-250V**	

Ref. No.	Part No.	Part Name & Description	Remarks
C3808	ECA2EM470E	CAP E 47UF-250V	
C3809	ECA2EM101E	CAP E 100UF-250V	
C3810	ECA2EM101E	CAP E 100UF-250V	
C3811	ECKC3D332KBN	CAP C 3300PF-K-2KV	
C4805	ECA1CM470B	CAP E 47UF/16V	
C4806	ECQV1H334JL3	CAP P .33UF-J-50V	
C4913	ECEA1CN100UB	CAP E 10UF-16V	
C4914	ECEA1CN100UB	CAP E 10UF-16V	
C4915	ECA1CM220B	CAP E 22UF-16V	
C4916	ECEA1CN220UB	CAP E 22UF-16V	
C4917	ECEA1CN220UB	CAP E 22UF-16V	
C4920	ECJ2VF1H104Z	CAP C .1UF-Z-50V	
C4921	ECA1CM470B	CAP E 47UF/16V	
C4922	ECJ2VB1C104K	CAP C .1UF-K-16V / CT-32HL43G/UG, CT-36HL43G/UG	
C4922	ECQB1H104JF3	CAP P .10UF-J-50V / CT-32HXC43G/UG	
C4923	ECA1VM470B	CAP E 47UF/35V	
C4924	ECA1VM470B	CAP E 47UF/35V	
C4925	ECQB1H104JF3	CAP P .10UF-J-50V	
C4930	EEUFC1E470B	CAP E 47UF-25V / CT-32HL43G/UG, CT-36HL43G/UG	
DIODES			
D006	MAZ43000HF	DIODE ZENER	
D009	MA2C165001VT	DIODE	
D010	MAZ40300MF	DIODE ZENER	
D13	K1ZZ00001205	DIODE	
D402	MAZ42700MF	DIODE ZENER	
D405	B0EAKM000018	DIODE RECTIFIER	
D406	B0EAKM000018	DIODE RECTIFIER	
D407	MA2C165001VT	DIODE	
D408	MA2C165001VT	DIODE	
D410	MA2C165001VT	DIODE	
D411	MA2C165001VT	DIODE	
D412	MA2C165001VT	DIODE	
D452	MA2C165001VT	DIODE	
D468	MAZ40620MF	DIODE ZENER	
D477	MA2C029WBF	DIODE	
D501	D1NL40V70	DIODE	
D502	MAZ41500MF	DIODE ZENER	
D503	B0KZ00000001	DIODE	
D505	MAZ40330MF	DIODE ZENER	
D509	MA2C165001VT	DIODE	
D510	MAZ40820MF	DIODE ZENER	
D511	D1NL40V70	DIODE	
D512	D1NL40V70	DIODE	⚠
D515	D1NL40V70	DIODE	
D516	MAZ40510LF	DIODE ZENER	
D517	D1NL40V70	DIODE	
D518	D1NL40V70	DIODE	
D520	MA167TA5VT	DIODE SWITCHING	
D550	B0HAMP000059	DIODE	
D703	D1NL40V70	DIODE	
D708	MAZ41500MF	DIODE ZENER	
D711	B0AAGR000002	DIODE SWITCHING	
D751	MA2C165001VT	DIODE	
D761	MA2C165001VT	DIODE	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
D801	B0FDAT000001	DIODE	⚠
D802	MA2C700A0F	DIODE	
D803	D4DDF1R50001	DIODE	⚠
D804	MAZ41200MF	DIODE ZENER	
D806	AU01ZV0	DIODE	
D807	MA2C165001VT	DIODE	
D809	D4EAC3910001	DIODE	⚠
D811	B0EAKL000008	DIODE RECTIFIER	
D814	MA2C165001VT	DIODE	
D815	MA2C165001VT	DIODE	
D816	MA2C165001VT	DIODE	
D817	MAZ42200LF	DIODE ZENER	
D818	MAZ42000MF	DIODE ZENER	
D824	B0BA01000046	DIODE	⚠
D825	B0HAPV000011	DIODE	⚠
D826	MA3D690	DIODE	
D827	B0HANM000016	DIODE	
D828	MA3D690	DIODE	
D829	B0HANM000016	DIODE	
D830	MA3D690	DIODE	
D831	MA2C165001VT	DIODE	
D832	MA2C165001VT	DIODE	
D833	MAZ41100HF	DIODE ZENER	
D834	AU02ZV0	DIODE	
D836	AU02ZV0	DIODE	
D839	MAZ40390MF	DIODE ZENER	
D840	MA2C165001VT	DIODE	
D845	MA2C165001VT	DIODE	
D846	MAZ41800MF	DIODE ZENER	
D847	MAZ43000MF	DIODE ZENER	
D848	MA2C165001VT	DIODE	
D850	MA2C165001VT	DIODE	
D851	MA2C165001VT	DIODE	
D861	B0JAME000052	DIODE	
D862	B0JAME000052	DIODE	
D874	B0JCME000025	DIODE	
D875	B0JCME000025	DIODE	
D876	MA2C165001VT	DIODE	
D877	MA2C165001VT	DIODE	
D878	B0JCME000025	DIODE	
D881	B0BA01000046	DIODE ZENER	
D883	B0BA01000046	DIODE ZENER	
D884	TMPG12G3	DIODE	
D889	MA2C165001VT	DIODE	
D893	MA2C165001VT	DIODE	
D894	MA2C165001VT	DIODE	
D898	MA2C165001VT	DIODE	
D899	MA2C165001VT	DIODE	
D1001	LN81RPH	DIODE / CT-32HL43G/UG, CT-36HL43G/UG	
D1001	LN81RPHCF3	DIODE / CT-32HXC43G/UG	
D1501	MAZ40750HF	DIODE ZENER	
D1503	MAZ40300HF	DIODE ZENER	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
D1504	MAZ40200HF	DIODE ZENER	
D1505	B0HACW000002	DIODE	
D1508	MA2C165001VT	DIODE	
D1509	AU02AV0	DIODE	
D1510	AU02AV0	DIODE	
D1513	MA2C165001VT	DIODE	
D2320	MAZ33000ML	DIODE	
D2321	MAZ33000ML	DIODE	
D2322	MA3X152K0L	DIODE	
D2324	MA3X152K0L	DIODE	
D2325	MA3X152K0L	DIODE	
D2326	MAZ42700MF	DIODE ZENER	
D2327	MAZ42700MF	DIODE ZENER	
D3001	MAZ31100ML	DIODE ZENER	
D3002	MAZ31100ML	DIODE ZENER	
D3003	MAZ31100ML	DIODE ZENER	
D3004	MAZ31100ML	DIODE ZENER	
D3005	MAZ31100ML	DIODE ZENER	
D3006	MAZ31100ML	DIODE ZENER	
D3007	MAZ31100ML	DIODE ZENER	
D3008	MAZ31100ML	DIODE ZENER	
D3009	MAZ31100ML	DIODE ZENER	
D3010	MAZ31100ML	DIODE ZENER	
D3011	MAZ31100ML	DIODE ZENER	
D3012	MAZ31100ML	DIODE ZENER	
D3013	MAZ31100ML	DIODE ZENER	
D3014	MAZ31100ML	DIODE ZENER	
D3015	MAZ31100ML	DIODE ZENER	
D3016	MAZ31100ML	DIODE ZENER	
D3017	MAZ31100ML	DIODE ZENER	
D3018	MAZ31100ML	DIODE ZENER	
D3019	MAZ31100ML	DIODE ZENER	
D3020	MAZ31100ML	DIODE ZENER	
D3021	MAZ31100ML	DIODE ZENER	
D3022	MAZ31100ML	DIODE ZENER	
D3023	MAZ31100ML	DIODE ZENER	
D3024	MAZ31100ML	DIODE ZENER	
D3025	MAZ31100ML	DIODE ZENER	
D3026	MAZ31100ML	DIODE ZENER	
D3027	MAZ31100ML	DIODE ZENER	
D3028	MAZ31100ML	DIODE ZENER	
D3029	MAZ31100ML	DIODE ZENER	
D3030	MAZ31100ML	DIODE ZENER	
D3031	MAZ31100ML	DIODE ZENER	
D3032	MAZ31100ML	DIODE ZENER	
D3033	MAZ31100ML	DIODE ZENER	
D3034	MAZ31100ML	DIODE ZENER	
D3035	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-32HXC43UG, / CT-36HL43G/UG	
D3036	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-32HXC43UG, / CT-36HL43G/UG	
D3037	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-32HXC43UG, / CT-36HL43G/UG	
D3038	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-32HXC43UG, / CT-36HL43G/UG	
D3039	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-32HXC43UG, / CT-36HL43G/UG	
D3110	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3111	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	

Ref. No.	Part No.	Part Name & Description	Remarks
D3112	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3113	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3114	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3115	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3116	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3117	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3118	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3119	MAZ31100ML	DIODE ZENER / CT-32HXC43G/UG	
D3151	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-36HL43G/UG	
D3152	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-36HL43G/UG	
D3153	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-36HL43G/UG	
D3154	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-36HL43G/UG	
D3155	MAZ31100ML	DIODE ZENER / CT-32HL43G/UG, CT-36HL43G/UG	
D3156	MAZ31100ML	DIODE ZENER	
D3159	MAZ31100ML	DIODE ZENER	
D3160	MAZ31100ML	DIODE ZENER	
D3801	MAZ41200MF	DIODE ZENER	
D3802	MAZ41200MF	DIODE ZENER	
D3803	MAZ41200MF	DIODE ZENER	
D3804	B0HALP000002	DIODE FAST RECOVERY	
D3805	B0HALP000002	DIODE FAST RECOVERY	
D3806	B0HALP000002	DIODE FAST RECOVERY	
D3807	B0HALP000002	DIODE FAST RECOVERY	
D3808	B0HALP000002	DIODE FAST RECOVERY	
D3809	B0HALP000002	DIODE FAST RECOVERY	
D3811	D4EAB3610002	DIODE	
D4805	MA2C165001VT	DIODE	
D4806	MA2C165001VT	DIODE	
FUSES			
F801	XBA2A00101	FUSE 6.3A 125V	⚠
INTEGRATED CIRCUITS			
IC432	C0ABBA000073	INT. CKT.	
IC433	C0ABBA000073	INT. CKT.	
IC451	LA7876N	INT CKT	
IC500	C0AABB000107	INT CKT	
IC511	AN6914S-E1	INT CKT	
IC751	AN6914S-E1	INT CKT	
IC752	C0ZBZ0000373	INT. CKT.	
IC801	AN8029	INT CKT	⚠
IC802	C0EAS0000024	INT. CKT.	⚠
IC804	B0EBKM000016	DIODE RECTIFIER	
IC811	PC123FY2	INT CKT	⚠
IC871	C0DACMG00001	INT CKT	
IC872	C0DACMG00001	INT CKT	
IC875	C0DACMG00001	INT CKT	
IC876	C0DAZJG00004	INT. CKT.	
IC901	C5AA00000195	INT CKT	
IC1004	TVR2AJ160S	INT CKT / CT-32HL43G/UG, CT-36HL43G/UG	
IC1004	TVR2AJ161S	INT CKT / CT-32HXC43G/UG	
IC1501	C0ABBA000073	INT. CKT.	
IC2201	AN5849S-E1V	INT CKT	
IC2302	C1AA00000645	INT CKT	
IC2304	C0ABBA000073	INT. CKT.	

Ref. No.	Part No.	Part Name & Description	Remarks
IC2451	C1BB00000772	INT CKT / CT-32HL43G/UG, CT-36HL43G/UG	
IC2451	NJW1137MPTE1	INT CKT / CT-32HXC43G/UG	
IC3002	AN15852A-VT	INT CKT	
IC3003	C1AB00000460	INT. CKT.	
IC3801	C1AA00000648	INT CKT (VIDEO OUTPUT AMP	
IC3802	C1AA00000648	INT CKT (VIDEO OUTPUT AMP	
IC3803	C1AA00000648	INT CKT (VIDEO OUTPUT AMP	
IC4803	C0AABB000107	INT. CKT.	
IC4904	C0AABB000107	INT. CKT.	
IC4905	BD3869AF-E2	INT CKT	
RM001	PNA4701M04TV	INT CKT / CT-32HXC43G/UG	
RM001	PNA4701M05TV	INT CKT / CT-32HL43G/UG, CT-36HL43G/UG	
COILS			
J330	EXCELSA39V	FERRITE BEAD	
L009	ELELN330KA	COIL PEAKING 33UH	
L011	ELELN330KA	COIL PEAKING 33UH	
L401	EXCELSA39V	FERRITE BEAD	
L431	ELESN101KA	COIL PEAKING 100UH	
L432	EXCELDR25V	FERRITE BEAD	
L500	TALL08TR56MA	COIL	
L503	TALL13N103JB	COIL	
L506	EXCELSA24T	FERRITE BEAD	
L551	ELH5L7720	COIL	⚠
L553	ELH5L8110	COIL	⚠
L711	ELESN100KA	COIL PEAKING 10UH	
L751	ELC18B151G	FILTER	
L752	TALFP15B152K	COIL	
L759	EXCELSA35T	FERRITE BEAD	
L801	G0B650H00002	COIL	⚠
L802	G0B332H00002	COIL	⚠
L803	G0B332H00002	COIL	⚠
L804	G0B102H00009	COIL	⚠
L807	EXCELDR35V	FERRITE BEAD	
L812	EXCELSA35B	FERRITE BEAD	
L813	EXCELSA39E	FERRITE BEAD	
L814	TALL08T101KA	LINE FILTER	
L815	EXCELSA39E	FERRITE BEAD	
L816	EXCELSA39E	FERRITE BEAD	
L819	EXCELSA24T	FERRITE BEAD	
L820	EXCELSA24T	FERRITE BEAD	
L821	EXCELDR35V	FERRITE BEAD	
L824	EXCELDR35V	FERRITE BEAD	
L825	G0A151D00002	COIL	
L826	TLUADTB820K	COIL	
L827	TALL08T470KA	COIL	
L829	EXCELDR35V	FERRITE BEAD	
L850	ELESN101JA	COIL PEAKING 100UH	
L875	G0A151ZA0004	COIL	
L876	G0A151ZA0004	COIL	
L878	G0A331ZA0004	COIL	
L890	EXCELDR35V	FERRITE BEAD	
L891	G0A101E00003	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
L904	G0B800H00001	COIL	
L1501	TALFP15B222K	COIL	
L2201	ELESN100JA	COIL PEAKING 10UH	
L2331	ELC12E390	COIL	
L2332	ELC12E390	COIL	
L2334	EXCELDR35V	FERRITE BEAD	
L2335	EXCELDR35V	FERRITE BEAD	
L2338	G0B800H00001	COIL	
L2339	G0B800H00001	COIL	
L2341	G0A330G00010	COIL	
L2342	G0A330G00010	COIL	
L3001	EXCELSA35T	FERRITE BEAD	
L3008	TALC325T100K	COIL	
L3010	TALC325T100K	COIL	
L3012	ELJPA2R2MF	CHIP INDUCTOR 2.2UH / CT-32HL43G/UG, CT-36HL43G/UG	
L3013	ELJPA100KF	CHIP INDUCTOR 10UH / CT-32HL43G/UG, CT-36HL43G/UG	
L3804	TALV35VB1R0J	COIL	
L3805	TALV35VB1R0J	COIL	
L3806	TALV35VB1R0J	COIL	
L3807	EXCELSA24T	FERRITE BEAD	
TRANSISTORS			
Q007	2SD601ARTX	TRANSISTOR	
Q404	2SD601ASTX	TRANSISTOR	
Q405	2SA1309ATA	TRANSISTOR	
Q406	2SD601ARTX	TRANSISTOR	
Q501	B1CEML000001	TRANSISTOR	
Q502	2SK2847LBMAT	TRANSISTOR	
Q503	2SD601ARTX	TRANSISTOR	
Q509	2SC1473QR	TRANSISTOR	
Q510	2SC1473QR	TRANSISTOR	
Q512	2SC1685QRSTA	TRANSISTOR	
Q513	2SD601ARTX	TRANSISTOR	
Q551	B1BAJW000001	TRANSISTOR	
Q562	2SC1473QRTA	TRANSISTOR	
Q751	2SK2538000LB	TRANSISTOR	
Q752	2SD601ARTX	TRANSISTOR	
Q754	2SD601ARTX	TRANSISTOR	
Q755	B1DEGG000010	TRANSISTOR	
Q801	2SK2917LB	TRANSISTOR	⚠
Q802	2SC1685QRSTA	TRANSISTOR	
Q803	2SC1685QRSTA	TRANSISTOR	
Q804	2SA1309ATA	TRANSISTOR	
Q805	2SC1685QRSTA	TRANSISTOR	
Q806	2SC1685QRSTA	TRANSISTOR	
Q807	2SC1318STA	TRANSISTOR	
Q808	2SC1685QRSTA	TRANSISTOR	
Q854	2SA19610QAHW	TRANSISTOR	
Q860	2SD601ARTX	TRANSISTOR	
Q861	2SD601ARTX	TRANSISTOR	
Q862	2SD601ARTX	TRANSISTOR	
Q863	2SD601ARTX	TRANSISTOR	
Q880	2SB709ARTX	TRANSISTOR	
Q1501	B1DEDR000005	TRANSISTOR	
Q1502	B1DEDR000005	TRANSISTOR	

[illegible]	[illegible]	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q1503	B1BAAT000001	TRANSISTOR	
Q1504	2SC1685QRSTA	TRANSISTOR	
Q1505	2SC1685QRSTA	TRANSISTOR	
Q1506	2SD601ARTX	TRANSISTOR	
Q2301	2SB709ARTX	TRANSISTOR	
Q2302	2SB709ARTX	TRANSISTOR	
Q2304	2SD601ARTX	TRANSISTOR	
Q2306	2SD601ARTX	TRANSISTOR	
Q2307	2SB709ARTX	TRANSISTOR	
Q2313	2SD601ARTX	TRANSISTOR	
Q2314	2SD601ARTX	TRANSISTOR	
Q2334	2SD601ARTX	TRANSISTOR	
Q2335	2SD601ARTX	TRANSISTOR	
Q2336	2SB709ARTX	TRANSISTOR	
Q2337	2SD601ARTX	TRANSISTOR	
Q2338	2SD601ARTX	TRANSISTOR	
Q2339	2SD601ARTX	TRANSISTOR	
Q2340	2SB709ARTX	TRANSISTOR	
Q2451	2SD601ARTX	TRANSISTOR	
Q2452	2SD601ARTX	TRANSISTOR	
Q3026	2SB709ARTX	TRANSISTOR	
Q3157	2SD601ARTX	TRANSISTOR	
Q3158	2SD601ARTX	TRANSISTOR	
Q4901	2SD601ARTX	TRANSISTOR	
RELAYS			
RL451	TSE10814	RELAY	
RL801	K6B1AGA00043	RELAY	⚠
RL802	TSE10814	RELAY	⚠
RL803	K6B1AGA00042	RELAY	⚠
RL804	K6B1CGA00075	RELAY	⚠
RESISTORS			
R050	ERJ6GEYJ101V	RES M 100-J-1/10W	
R051	ERJ6GEYJ101V	RES M 100-J-1/10W	
R052	ERJ6GEYJ101V	RES M 100-J-1/10W	
R053	ERJ6GEYJ101V	RES M 100-J-1/10W	
R078	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R079	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R080	ERJ6GEYJ220V	RES M 22-J-1/10W	
R081	ERDS2TJ220T	RES C 22-J-1/4W	
R407	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R408	ERDS2TJ272T	RES C 2.7K-J-1/4W	
R409	ERJ6GEYJ563V	RES M 56K-J-1/10W	
R410	ERJ6GEYJ224V	RES M 220K-J-1/10W	
R411	ERJ6GEYJ332V	RES M 3.3K-J-1/10W	
R412	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R413	ERDS2TJ104T	RES C 100K-J-1/4W	
R414	ERX1SJR82P	RES M .82-J-1/2W	
R415	ERG3FJ331H	RES M 330-J-3W	
R417	ERJ6GEYJ272V	RES M 2.7K-J-1/10W	
R418	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R419	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R420	ERJ6GEYJ272V	RES M 2.7K-J-1/10W	
R421	ERJ6ENF1602V	RES M 16K-F-1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R422	ERJ6ENF2001V	RES M 2K-F-1/10W	
R423	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R424	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R425	ERDS1FJ1R0P	RES C 1.0-J-1/2W	
R426	ERJ6GEYJ123V	RES M 12K-J-1/10W	
R427	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R428	ER0S2THF9761	RES M 9.76K-F-1/4W	
R429	ERJ6GEYJ182V	RES M 1.8K-J-1/10W	
R430	ER0S2THF1500	RES M 150-F-1/4W	
R431	ER0S2THF2000	RES M 200-F-1/4W	
R434	ERX12SJ1R8P	RES M 1.8-J-1/2W	
R435	ERX12SJ2R2P	RES M 2.2-J-1/2W	
R436	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R440	ERG1SJ102P	RES M 1K-J-1W	
R441	ERX1SJ1R0P	RES M 1.0-J-1W	
R444	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R445	ERX1SJ1R0P	RES M 1.0-J-1W	
R447	ERJ6ENF6800V	RES M 680-F-1/10W	
R449	ERJ6ENF3901V	RES M 3.9K-F-1/10W	
R464	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R465	ERJ6ENF2201V	RES M 2.2K-F-1/10W	
R470	ERJ6GEYJ683V	RES M 68K-J-1/10W	
R471	ERJ6ENF1003V	RES M 100K-F-1/10W	
R472	ERJ6ENF2002V	RES M 20K-F-1/10W	
R476	ERJ6GEYJ823V	RES M 82K-J-1/10W	
R479	ERJ6GEYJ821V	RES M 820-J-1/10W	
R481	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R495	ERJ6ENF2203V	RES M 220K-F-1/10W	
R501	ERDS2TJ104T	RES C 100K-J-1/4W	
R502	ERDS2TJ680T	RES C 68-J-1/4W	
R503	ERG3FJ181H	RES M 180-J-3W	
R504	ERG1SJ102P	RES M 1K-J-1W	
R505	ERG1SJ100P	RES M 10-J-1W	
R510	ERG2FJ331H	RES M 330-J-2W	
R512	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R513	ERC12GK103D	RES C 10K-K-1/2W	
R514	ER0S2THF3242	RES M 32.4K-F-1/4W	
R515	ER0S2THF2612	RES M 26.1K-F-1/4W	
R516	ERDS2TJ101T	RES C 100-J-1/4W	
R517	ERG1SJ103P	RES M 10K-J-1W	
R518	ERDS1FJ1R5T	RES C 1.5-J-1/2W	⚠
R520	ERQ14AJ2R2E	RES F 2.2-J-1/4W	⚠
R521	ERJ6ENF6041V	RES M 6.04K-F-1/10W	⚠
R522	ERJ6ENF2321V	RES M 2.32K-F-1/10W	⚠
R524	EVMEAGA00B14	CONTROL 10K	
R525	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R526	ERQ12HJ1R0P	RES F 1.0-J-1/2W	
R527	ERDS2TJ472T	RES C 4.7K-J-1/4	
R528	ERQ1CJP120S	RES F 12-J-1W	
R529	ERDS2TJ273T	RES C 27K-J-1/4W	
R530	ERDS2TJ123T	RES C 12K-J-1/4W	
R531	ERDS2TJ221T	RES C 220-J-1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R532	**ERDS1FJ1R0P**	**RES C 1.0-J-1/2W**	⚠
R533	**ERDS1FJ1R0P**	**RES C 1.0-J-1/2W**	⚠
R534	**ER0S2THF9102**	**RES M 91K-F-1/4W**	
R535	**ERJ6GEYJ562V**	**RES M 5.6K-J-1/10W**	
R536	**ERDS2TJ101T**	**RES C 100-J-1/4W**	
R538	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R540	**ERJ6GEYJ272V**	**RES M 2.7K-J-1/10W**	
R541	**ERJ6GEYJ103V**	**RES M 10K-J-1/10W**	
R550	**ER0S2THF5361**	**RES M 5.36K-F-1/4W**	
R560	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R561	**ERJ6GEYJ103V**	**RES M 10K-J-1/10W**	
R562	**ERJ6GEYJ104V**	**RES M 100K-J-1/10W**	
R586	**ERJ6GEYJ103V**	**RES M 10K-J-1/10W**	
R587	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R588	**ERJ6GEYJ103V**	**RES M 10K-J-1/10W**	
R589	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R595	**ERDS2TJ273T**	**RES C 27K-J-1/4W**	
R701	**ERJ6GEYJ153V**	**RES M 15K-J-1/10W**	
R702	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R703	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R704	**ERJ6GEYJ202V**	**RES M 2K-J-1/10W**	
R705	**ERJ6GEYJ103V**	**RES M 10K-J-1/10W**	
R706	**ERJ6GEYJ152V**	**RES M 1.5K-J-1/10W**	
R707	**ERJ6GEYJ102V**	**RES M 1K-J-1/10W**	
R708	**ERJ6GEYJ183V**	**RES M 18K-J-1/10W**	
R709	**ERDS1FJ680T**	**RES C 68-J-1/2W**	
R711	**ERJ6GEYJ682V**	**RES M 6.8K-J-1/10W**	
R712	**ERJ6GEYJ162V**	**RES M 1.6K-J-1/10W**	
R714	**ERJ6GEYJ473V**	**RES M 47K-J-1/10W**	
R715	**ERJ6GEYJ751V**	**RES M 750-J-1/10W**	
R717	**ERF5AK4R7H**	**RES W 4.7-K-5W**	
R718	**ERJ6GEYJ102V**	**RES M 1K-J-1/10W**	
R720	**ERJ6GEYJ152V**	**RES M 1.5K-J-1/10W**	
R787	**ERQ14AJ220P**	**RES F 22-J-1/4W**	
R788	**ERDS2TJ473T**	**RES C 47K-J-1/4W**	
R800	**ERU5TCK1R5T**	**RES F 1.5-K-5W**	⚠
R801	**ERC14GK824D**	**RES C 820K-K-1/4W**	
R802	**ERJ6GEYJ103V**	**RES M 10K-J-1/10W**	
R803	**ERDS2TJ680T**	**RES C 68-J-1/4W**	
R804	**ERDS2TJ331T**	**RES C 330-J-1/4W**	
R805	**ERG2FJ121H**	**RES M 120-J-2W**	
R806	**ERDS2TJ473T**	**RES C 47K-J-1/4W**	
R807	**ERDS2TJ820T**	**RES C 82-J-1/4W**	
R808	**ERDS2TJ680T**	**RES C 68-J-1/4W**	
R809	**ERDS2TJ472T**	**RES C 4.7K-J-1/4**	
R810	**ERDS2TJ473T**	**RES C 47K-J-1/4W**	
R811	**ERDS2TJ472T**	**RES C 4.7K-J-1/4**	
R812	**ERDS2TJ473T**	**RES C 47K-J-1/4W**	
R813	**ERDS1FJ152T**	**RES C 1.5K-J-1/2W**	
R814	**ERG3FJ223**	**RES M 22K-J-3W**	
R815	**ERDS2TJ331T**	**RES C 330-J-1/4W**	
R816	**ERDS2TJ471T**	**RES C 470-J-1/4W**	
R817	**ER0S2THF1371**	**RES M 1.37K-F-1/4W**	

Ref. No.	Part No.	Part Name & Description	Remarks
R818	**ERDS2TJ220T**	**RES C 22-J-1/4W**	
R819	**ERDS1FJ820T**	**RES C 82-J-1/2W**	
R820	**ERDS1FJ120T**	**RES C 12-J-1/2W**	
R821	**ERX12SJ1R8P**	**RES M 1.8-J-1/2W**	
R822	**ERX12SJ1R8P**	**RES M 1.8-J-1/2W**	
R823	**ERDS2TJ102T**	**RES C 1K-J-1/4W**	
R824	**ERDS2TJ153T**	**RES C 15K-J-1/4W**	
R825	**ERDS2TJ104T**	**RES C 100K-J-1/4W**	
R826	**ERDS2TJ103T**	**RES C 10K-J-1/4W**	
R828	**ERDS2TJ103T**	**RES C 10K-J-1/4W**	
R829	**ERJ6GEYJ103V**	**RES M 10K-J-1/10W**	
R830	**ERJ6GEYJ272V**	**RES M 2.7K-J-1/10W**	
R831	**ERDS2TJ332T**	**RES C 3.3K-J-1/4W**	
R832	**ERD75TAJ825**	**RES C 8.2MEG-J-3/4W**	⚠
R833	**ERDS2TJ104T**	**RES C 100K-J-1/4W**	
R834	**ERDS2TJ104T**	**RES C 100K-J-1/4W**	
R835	**ERDS2TJ101T**	**RES C 100-J-1/4W**	
R836	**ERJ6GEYJ102V**	**RES M 1K-J-1/10W**	
R837	**ERDS2TJ222T**	**RES C 2.2K-J-1/4W**	
R838	**ERDS1FJ330T**	**RES C 30-J-1/2W**	
R839	**ERDS2TJ222T**	**RES C 2.2K-J-1/4W**	
R840	**ERDS2TJ470T**	**RES C 47-J-1/4W**	
R841	**ERDS2TJ104T**	**RES C 100K-J-1/4W**	
R842	**ERDS2TJ223T**	**RES C 22K-J-1/4W**	
R843	**ERDS2TJ681T**	**RES C 680-J-1/4W**	
R844	**ERDS2TJ104T**	**RES C 100K-J-1/4W**	
R845	**ERDS2TJ332T**	**RES C 3.3K-J-1/4W**	
R846	**ERJ6GEYJ182V**	**RES M 1.8K-J-1/10W**	
R847	**ERDS1FJ473T**	**RES C 47K-J-1/2W**	
R852	**ERDS1FJ562T**	**RES C 56K-J-1/2W**	
R854	**ERDS1TJ102T**	**RES C 1K-J-1/2W**	
R855	**ERDS2TJ913T**	**RES C 91K-J-1/4W**	
R856	**ERDS2TJ123T**	**RES C 12K-J-1/4W**	
R857	**ERX1SJ1R0P**	**RES M 1.0-J-1W**	
R858	**ERX1SJ1R0P**	**RES M 1.0-J-1W**	
R859	**ERDS2TJ272T**	**RES C 2.7K-J-1/4W**	
R860	**ERDS1FJ102T**	**RES C 1K-J-1/2W**	
R861	**ERX12SJR22P**	**RES M .22-J-1/2W**	
R862	**ERX12SJR22P**	**RES M .22-J-1/2W**	
R863	**ERX12SJR22P**	**RES M .22-J-1/2W**	
R865	**ERDS2TJ102T**	**RES C 1K-J-1/4W**	
R867	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R868	**ERJ6GEYJ223V**	**RES M 22K-J-1/10W**	
R869	**ERJ6GEYJ101V**	**RES M 100-J-1/10W**	
R870	**ERJ6GEYJ223V**	**RES M 22K-J-1/10W**	
R875	**ERJ6GEYJ473V**	**RES M 47K-J-1/10W**	
R876	**ERJ6GEYJ393V**	**RES M 39K-J-1/10W**	
R877	**ERJ6GEYJ473V**	**RES M 47K-J-1/10W**	
R878	**ERJ6GEYJ393V**	**RES M 39K-J-1/10W**	
R879	**ERDS1FJ750T**	**RES C 75-J-1/2W**	
R888	**ERJ6ENF1601V**	**RES M 1.6K-F-1/10W**	
R889	**ERJ6ENF1501V**	**RES M 1.5K-F-1/10W**	
R890	**ERJ6ENF1501V**	**RES M 1.5K-F-1/10W**	
R891	**ERJ6ENF4700V**	**RES M 470-F-1/10W**	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
R892	ERJ6ENF7500V	RES M 750-F-1/10W	
R893	ERJ6ENF4701V	RES M 4.7K-F-1/10W	
R894	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R895	ERJ6GEYJ104V	RES M 100K-J-1/10W	
R896	ERJ6GEYJ203V	RES M 20K-J-1/10W	
R899	ERG1SJ273P	RES M 27K-J-1W	
R901	ERJ6GEYJ101V	RES M 100-J-1/10W	
R902	ERJ6ENF56R0V	RES M 56.0-F-1/10W	
R904	ERG3FJ221H	RES M 220-J-3W	
R905	ERQ1CJP331S	RES F 330-J-1W	
R1025	ERDS2TJ101T	RES C 100-J-1/4W	
R1026	ERDS2TJ101T	RES C 100-J-1/4W	
R1051	ERJ6ENF1002V	RES M 10K-F-1/10W	
R1052	ERJ6GEYJ222V	RES M 2.2K-J-1/10W	
R1053	ERJ6GEYJ222V	RES M 2.2K-J-1/10W	
R1054	ERJ6GEYJ332V	RES M 3.3K-J-1/10W	
R1055	ERJ6GEYJ512V	RES M 5.1K-J-1/10W	
R1056	ERJ6GEYJ912V	RES M 9.1K-J-1/10W	
R1057	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R1058	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R1059	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R1060	ERJ6GEYJ470V	RES M 47-J-1/10W	
R1061	ERJ6GEYJ101V	RES M 100-J-1/10W	
R1062	ERJ6GEYJ182V	RES M 1.8K-J-1/10W / CT-32HL43G/UG, CT-36HL43G/UG	
R1062	ERJ6GEYJ331V	RES M 330-J-1/10W / CT-32HXC43G/UG	
R1501	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R1503	ERJ6GEYJ222V	RES M 2.2K-J-1/10W	
R1504	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R1505	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R1506	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R1507	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R1508	ERJ6GEYJ332V	RES M 3.3K-J-1/10W	
R1514	ERJ6GEYJ331V	RES M 330-J-1/10W	
R1515	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R1521	ERDS2TJ104T	RES C 100K-J-1/4W	
R1522	ERDS2TJ104T	RES C 100K-J-1/4W	
R1523	ERDS2TJ104T	RES C 100K-J-1/4W	
R1525	ERJ6GEYJ122V	RES M 1.2K-J-1/10W	
R1526	ERJ6GEYJ101V	RES M 100-J-1/10W	
R1527	ERC14GK334D	RES C 330K-K-1/4W	
R1528	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R1529	ERG1SJ332P	RES M 3300-J-1W	
R1530	ERG3FJ331H	RES M 330-J-3W	
R1531	ERG3FJ681H	RES M 680-J-3W	
R1532	ERC12GK104D	RES C 100K-K-1/2W	
R1533	ERC12GK125D	RES C 1.2M-K-1/2W	
R1534	ERDS2TJ125T	RES C 1.2M-J-1/WW	
R1535	ERJ6GEYJ203V	RES M 20K-J-1/10W	
R1536	ERG2FJ123H	RES M 12K-J-2W	
R1537	ERJ6GEYJ101V	RES M 100-J-1/10W	
R1538	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R1539	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R1540	ERJ6GEYJ560V	RES M 56-J-1/10W	
R2203	ERJ6GEYJ222V	RES M 2.2K-J-1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R2206	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2207	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2221	ERJ6GEYJ101V	RES M 100-J-1/10W	
R2301	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2302	ERJ6GEYJ392V	RES M 3.9K-J-1/10W	
R2303	ERJ6GEYJ271V	RES M 270-J-1/10W	
R2304	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R2305	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R2307	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R2308	ERJ6GEYJ183V	RES M 18K-J-1/10W	
R2309	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2313	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2314	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2324	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2325	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2326	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2327	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R2328	ERJ6GEYJ183V	RES M 18K-J-1/10W	
R2329	ERJ6GEYJ432V	RES M 4.3K-J-1/10W	
R2330	ERDS2TJ333T	RES C 33K-J-1/4W	
R2332	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2333	ERJ6GEYJ332V	RES M 3.3K-J-1/10W	
R2334	ERJ6ENF1100V	RES M 110-F-1/10W	
R2335	ERJ6ENF1100V	RES M 110-F-1/10W	
R2336	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2337	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2338	ERJ6GEYJ332V	RES M 3.3K-J-1/10W	
R2339	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2341	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R2342	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2345	ERJ6GEYJ183V	RES M 18K-J-1/10W	
R2346	ERJ6GEYJ432V	RES M 4.3K-J-1/10W	
R2348	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2349	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2351	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R2352	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R2353	ERJ6ENF4701V	RES M 4.7K-F-1/10W	
R2354	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R2355	ERJ6GEYJ683V	RES M 68K-J-1/10W	
R2356	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R2357	ERJ6ENF1303V	RES M 130K-F-1/10W	
R2358	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R2359	ERJ6GEYJ683V	RES M 68K-J-1/10W	
R2360	ERJ6ENF4701V	RES M 4.7K-F-1/10W	
R2361	ERJ6ENF1202V	RES M 12K-F-1/10	
R2362	ERJ6GEYJ101V	RES M 100-J-1/10W	
R2363	ERJ6ENF5232V	RES M 5.32K-F-1/10W	
R2364	ERJ6ENF1001V	RES M 1K-F-1/10W	
R2365	ERJ6ENF1202V	RES M 12K-F-1/10	
R2366	ERJ6ENF1001V	RES M 1K-F-1/10W	
R2367	ERJ6GEYJ101V	RES M 100-J-1/10W	
R2368	ERJ6ENF5232V	RES M 5.32K-F-1/10W	
R2369	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R2370	ERJ6GEYJ102V	RES M 1K-J-1/10W	

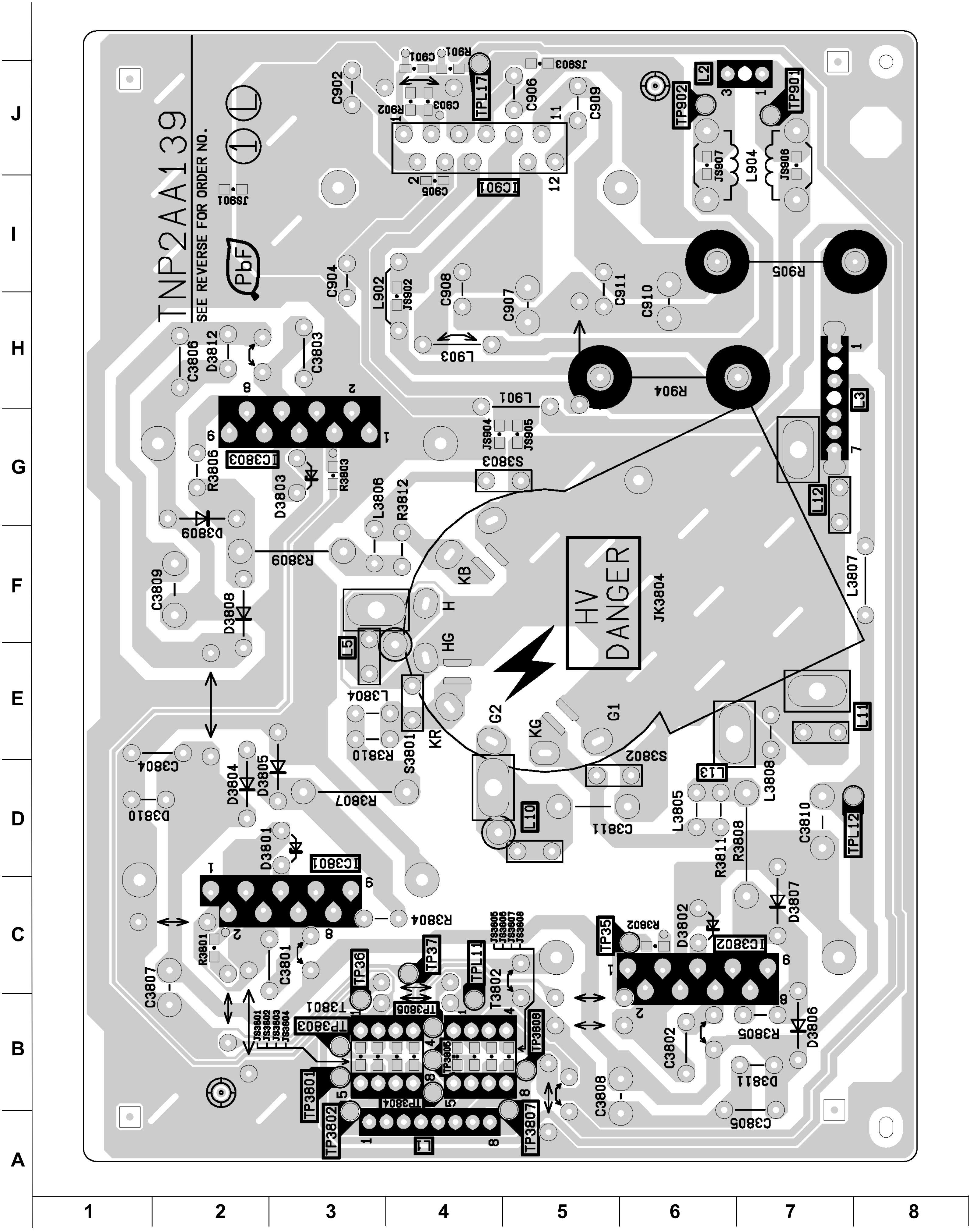
Ref. No.	Part No.	Part Name & Description	Remarks
R2371	ERJ6GEYJ223V	RES M 22K-J-1/10W	
R2373	ERJ6GEYJ153V	RES M 15K-J-1/10W	
R2385	ERDS2TJ102T	RES C 1K-J-1/4W	
R2386	ERDS2TJ102T	RES C 1K-J-1/4W	
R2451	ERDS2TJ681T	RES C 680-J-1/4W	
R2452	ERJ6GEYJ681V	RES M 680-J-1/10W	
R2456	ERJ6GEYJ471V	RES M 470-J-1/10W	
R2457	ERJ6GEYJ471V	RES M 470-J-1/10W	
R2460	ERDS2TJ101T	RES C 100-J-1/4W	
R2461	ERDS2TJ101T	RES C 100-J-1/4W	
R3001	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3002	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3005	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3007	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3011	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3014	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R3015	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3016	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3017	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3020	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R3021	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3022	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3023	ERJ6ENF1500V	RES M 150-F-1/10W	
R3024	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3025	ERJ6GEYJ471V	RES M 470-J-1/10W	
R3026	ERJ6GEYJ184V	RES M 180K-J-1/10W	
R3027	ERJ6GEYJ681V	RES M 680-J-1/10W	
R3028	ERJ6GEYJ681V	RES M 680-J-1/10W	
R3029	ERJ6GEYJ681V	RES M 680-J-1/10W	
R3030	ERJ6ENF68R0V	RES M 68-F-1/10W	
R3031	ERJ6ENF1500V	RES M 150-F-1/10W / CT-32HL43G/UG, CT-32HXC43G, / CT-36HL43G /UG	
R3031	ERJ6ENF68R0V	RES M 150-F-1/10W / CT-32HXC43UG	
R3032	ERJ6ENF1500V	RES M 150-F-1/10W / CT-32HL43G/UG, CT-32HXC43G, / CT-36HL43G /UG	
R3032	ERJ6ENF68R0V	RES M 150-F-1/10W / CT-32HXC43UG	
R3082	ERJ6ENF2001V	RES M 2K-F-1/10W	
R3083	ERJ6ENF2701V	RES M 2.7K-F-1/10W	
R3084	ERJ6ENF2001V	RES M 2K-F-1/10W	
R3085	ERJ6ENF2701V	RES M 2.7K-F-1/10W	
R3086	ERJ6GEYJ220V	RES M 22-J-1/10W / CT-32HL43G/UG, CT-36HL43G/UG	
R3089	ERJ6GEYJ220V	RES M 22-J-1/10W / CT-32HL43G/UG, CT-36HL43G/UG	
R3093	ERJ6GEYJ220V	RES M 22-J-1/10W / CT-32HL43G/UG, CT-36HL43G/UG	
R3100	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3101	ERDS2TJ221T	RES C 220-J-1/4W	
R3102	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3103	ERDS2TJ221T	RES C 220-J-1/4W	
R3104	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3105	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3106	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3107	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3108	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3109	ERDS2TJ221T	RES C 220-J-1/4W	
R3110	ERJ6GEYJ221V	RES M 220-J-1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R3111	ERDS2TJ221T	RES C 220-J-1/4W	
R3112	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3113	ERDS2TJ221T	RES C 220-J-1/4W	
R3114	ERDS2TJ221T	RES C 220-J-1/4W	
R3115	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3116	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3117	ERDS2TJ221T	RES C 220-J-1/4W	
R3118	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3119	ERDS2TJ221T	RES C 220-J-1/4W	
R3120	ERDS2TJ221T	RES C 220-J-1/4W	
R3121	ERJ6GEYJ820V	RES M 82-J-1/10W	
R3122	ERJ6GEYJ820V	RES M 82-J-1/10W	
R3123	ERJ6GEYJ820V	RES M 82-J-1/10W	
R3124	ERJ6GEYJ820V	RES M 82-J-1/10W	
R3125	ERJ6GEYJ820V	RES M 82-J-1/10W	
R3126	ERDS2TJ221T	RES C 220-J-1/4W	
R3127	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3128	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3129	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3130	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3131	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3133	ERJ6ENF1500V	RES M 150-F-1/10W	
R3134	ERJ6ENF1500V	RES M 150-F-1/10W	
R3135	ERJ6ENF1500V	RES M 150-F-1/10W	
R3136	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3137	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3140	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R3143	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R3152	ERJ6GEYJ224V	RES M 220K-J-1/10W	
R3154	ERJ6GEYJ224V	RES M 220K-J-1/10W	
R3157	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3158	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3160	ERJ6GEYJ220V	RES M 22-J-1/10W	
R3161	ERJ6GEYJ220V	RES M 22-J-1/10W	
R3162	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3163	ERDS2TJ102T	RES C 1K-J-1/4W	
R3164	ERDS2TJ102T	RES C 1K-J-1/4W	
R3165	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3166	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3167	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3168	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3170	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3172	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3173	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3177	ERDS2TJ331T	RES C 330-J-1/4W	
R3178	ERDS2TJ331T	RES C 330-J-1/4W	
R3182	ERJ6ENF1801V	RES M 1.8K-F-1/10W	
R3183	ERJ6ENF2401V	RES M 2.4K-F-1/10W	
R3184	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3185	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3186	ERJ6ENF1801V	RES M 1.8K-F-1/10W	
R3187	ERJ6ENF2401V	RES M 2.4K-F-1/10W	
R3188	ERJ6GEYJ221V	RES M 220-J-1/10W	
R3189	ERJ6GEYJ102V	RES M 1K-J-1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R3190	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3191	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3192	ERJ6GEYJ102V	RES M 1K-J-1/10W	
R3193	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3194	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3195	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3196	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3197	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3198	ERJ6ENF75R0V	RES M 75.0-F-1/10W	
R3801	ERJ6ENF1000V	RES M 100-F-1/10W	
R3802	ERJ6ENF1000V	RES M 100-F-1/10W	
R3803	ERJ6ENF1000V	RES M 100-F-1/10W	
R3804	ERDS2TJ101T	RES C 100-J-1/4W	
R3805	ERDS2TJ101T	RES C 100-J-1/4W	
R3806	ERDS2TJ101T	RES C 100-J-1/4W	
R3807	ERC12GK821D	RES C 820-K-1/2W	
R3808	ERC12GK821D	RES C 820-K-1/2W	
R3809	ERC12GK821D	RES C 820-K-1/2W	
R3810	ERDS2TJ102T	RES C 1K-J-1/4W	
R3811	ERDS2TJ102T	RES C 1K-J-1/4W	
R3812	ERDS2TJ102T	RES C 1K-J-1/4W	
R4828	ERJ6GEYJ562V	RES M 5.6K-J-1/10W	
R4865	ER0S2TKF1502	RES M 15.0K-F-1/4	
R4866	ERJ6ENF6801V	RES M 6.8K-F-1/10W	
R4868	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R4869	ERJ6GEYJ333V	RES M 33K-J-1/10W	
R4870	ERJ6GEYJ683V	RES M 68K-J-1/10W	
R4871	ERJ6GEYJ100V	RES M 10-J-1/10W	
R4874	ERDS2TJ102T	RES C 1K-J-1/4W	
R4875	ERJ6GEYJ473V	RES M 47K-J-1/10W	
R4876	ERG1SJ470P	RES M 47-J-1W	
R4930	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R4931	ERJ6GEYJ682V	RES M 6.8K-J-1/10W	
R4932	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R4933	ERJ6GEYJ472V	RES M 4.7K-J-1/10W	
R4934	ERJ6GEYJ153V	RES M 15K-J-1/10W	
R4935	ERJ6GEYJ153V	RES M 15K-J-1/10W	
R4936	ERJ6GEYJ103V	RES M 10K-J-1/10W	
R4938	ERJ6GEYJ101V	RES M 100-J-1/10W	
R4939	ERJ6GEYJ101V	RES M 100-J-1/10W	
R4942	ERJ6GEYJ101V	RES M 100-J-1/10W	
R4943	ERJ6GEYJ101V	RES M 100-J-1/10W	
R4946	ERJ6ENF5602V	RES M 56K-F-1/10W	
R4947	ERJ6ENF2001V	RES M 2K-F-1/10W	
R4948	ERDS2TJ822T	RES C 8.2K-J-1/4W	
R4949	ERDS2TJ102T	RES C 1K-J-1/4W	
R4950	ERDS1FJ391T	RES C 390-J-1/2W	
R4951	ERX12SJR47P	RES M .47-J-1/2W	
R4952	ERX12SJR68P	RES M .68-J-2W	
R4953	ERDS1FJ391T	RES C 390-J-1/2W	
R5013	ERDS1FJ1R0T	RES C 1.0-J-1/2W	
R519A	ERQ1CZKPR22S	RES F .22-K-1W	
SWITCHES			
S001	EVQPBD05R	SWITCH / CT-32HL43G/UG, CT-36HL43G/UG	

Ref. No.	Part No.	Part Name & Description	Remarks
S001	EVQPF106K	SWITCH / CT-32HXC43G/UG	
S002	EVQPBD05R	SWITCH	
S003	EVQPBD05R	SWITCH	
S004	EVQPBD05R	SWITCH	
S005	EVQPBD05R	SWITCH	
S006	EVQPBD05R	SWITCH	
S007	EVQPBD05R	SWITCH	
TRANSFORMERS			
T501	ETH19K204AZ	TRANSFORMER	
T551	TXFFT03GSER	ASSY FLYBACK	⚠
T801	ETS42AD4A5AD	TRANSFORMER	⚠
T802	ETP30KB921GG	TRANSFORMER	⚠
T1501	ETF18L106A	TRANSFORMER	⚠
T2301	G0BYYYY00016	TRANSFORMER	
T3001	G0B250D00001	TRANSFORMER	
T3002	G0B250D00001	TRANSFORMER	
T3003	G0BYYYY00016	TRANSFORMER	
T3004	G0BYYYY00016	TRANSFORMER	
T3005	TF0402B04P03	TRANSFORMER	
T3006	TF0402B04P03	TRANSFORMER	
T3023	G0BYYYY00016	TRANSFORMER	
T3024	TF0402B04P03	TRANSFORMER	
T3025	TF0402B04P03	TRANSFORMER	
T3027	G0BYYYY00016	TRANSFORMER	
T3801	G0B250D00001	TRANSFORMER	
T3802	G0B250D00001	TRANSFORMER	
T4801	TF0402B04P03	TRANSFORMER	
T5001	G0B250D00001	TRANSFORMER / CT-32HL43G/UG, CT-36HL43G/UG	
OTHERS			
TNR001	ENG36619G	MAIN TUNER	⚠
TNR002	ENG36620G	SUB TUNER	⚠
1	M80LSW095X	CRT 32 INCH PF / CT-32HL43G/UG, CT-32HXC43G/UG	⚠
	A90LSW295X	CRT 36 INCH PF / CT-36HL43G/UG	⚠
M001	K3B10CA00041	CRT SOCKET	⚠
2	KDY45HE59F	DEFLECTION YOKE / CT-36HL43G/UG	⚠
	TLY2AA024	DEFLECTION YOKE / CT-32HL43G/UG, CT-32HXC43G/UG	⚠
M002	TXFYA010EGW	DAG GROUND	
3	TSP2AA016-1	DEGAUSSING COIL / CT-32HXC43G/UG	⚠
	TSP2AA025	DEGAUSSING COIL / CT-36HL43G/UG	⚠
	TSP2AA027	DEGAUSSING COIL / CT-32HL43G/UG	⚠
4	EABG8509A2	SUB-WOOFER BOX / CT-32HL43G/UG, CT-36HL43G/UG	
5	EASG12D555B2	SPEAKER / CT-32HXC43G/UG	
	EASG18S501B2	SPEAKER / CT-32HL43G/UG, CT-36HL43G/UG	
6	ENPE2A001	SPLITTER 2RF (U-LIM)	
7	TBX2AA0191	BUTTON FUNCTION KEY / CT-32HL43G/UG, CT-36HL43G/UG	
8	TKP2AA0722S	DOOR / CT-32HL43G/UG, CT-36HL43G/UG	
	TKP2AA0405S	DOOR / CT-32HXC43G/UG	
9	TEK6935	DOOR CATCH / CT-32HL43G/UG, CT-36HL43G/UG	
	TEK6940	DOOR CATCH / CT-32HXC43G/UG	

Ref. No.	Part No.	Part Name & Description	Remarks
10	TKP2AA0391	LED PANEL / CT-32HXC43G/UG	
	TKP2AA0741	LED PANEL / CT-32HL43G/UG, CT-36HL43G/UG	
11	TKX2AA0181	IR GUIDE / CT-32HL43G/UG, CT-36HL43G/UG	
M003	TMMJ057	RUBBER WASHER / CT-32HXC43G/UG	
M004	TMM2A30702	WEDGE YOKE / CT-32HL43G/UG, CT-36HL43G/UG	
12	TMW2A97121	STRAIN RELIEF: AC LINE CORD	
13	TMZ2AC50011	BRACKET SUPPORT CRT / CT-32HL43G/UG, CT-36HL43G/UG	
M005	TSM2AA001	MAGNET PERMALLOY	
M006	TSN63115-2	MAGNET PURITY / CT-32HL43G/UG, CT-36HL43G/UG	
	TSN63115-4	MAGNET PURITY / CT-32HXC43G/UG	
14	TSP2AF007	COIL ROTATION / CT-32HL43G/UG, CT-36HL43G/UG / CT-32HXC43G /UG	
15	TSP2AF008	COIL GEOMAGNETIC / CT-36HL43G/UG	
	TSP2AF009	COIL GEOMAGNETIC / CT-32HL43G/UG, CT-32HXC43G/UG	
M007	TSX2AA0351	LINE CORD AC	⚠
16	TTP2AA0733S	FRONT PANEL / CT-32HL43G/UG, CT-36HL43G/UG	
	TXFKP08GSER	FRONT PANELS (LEFT AND RIGHT) / CT-32HXC43G/UG	
17	TXFKU04GSER	ASSY CABINET BACK / CT-36HL43G/UG	
	TXFKU06GSER	ASSY CABINET BACK / CT-32HL43G/UG	
	TXFKU08GSER	ASSY CABINET BACK / CT-32HXC43G/UG	
18	TXFKY06GSER	ASSY CABINET FRONT / (INCLUDES PANASONIC BATCH, FRONT PANEL, LED PANEL AND IR GUIDE) CT-36HL43G/UG	
	TXFKY07GSER	ASSY CABINET FRONT / (INCLUDES PANASONIC BATCH, FRONT PANEL, LED PANEL AND IR GUIDE) CT-32HL43G/UG	
	TXFKY08GSER	ASSY CABINET FRONT / (INCLUDES PANASONIC BATCH, LED PANEL AND OVERLAY) CT-32HXC43G/UG	
M008	TXFSPB01BSER	ASSY SPEAKER BRACKETS / CT-32HXC43G/UG	
JK3001	TJB2AA0251	TERMINAL REAR A/V 12P	
JK3002	TJB2AA0241	TERMINAL REAR A/V 10P	
JK3151	TJBA187	JACK A/V OUTPUT / CT-32HXC43G/UG	
JK3151	TJB2AA0371	TERMINAL FRONT A/V / CT-32HL43G/UG, CT-36HL43G/UG	
JK5001	DV2R024NKB	EDI CONNECTOR / CT-36HL43G/UG, CT-32HL43G/UG	
JK5002	TJB2AA0411	TERMINAL VIDEO / CT-36HL43G/UG, CT-32HL43G/UG	
OTHERS			
M009	TQB2AA0467	OWNERS MANUAL	
M010	EUR7603Z90	REMOTE CONTROL / CT-32HL43G/UG, CT-36HL43G/UG	
M011	UR76EC0303D	BATTERY COVER, REMOTE / CT-32HL43G/UG, CT-36HL43G/UG	
M012	EUR7613Z40	REMOTE CONTROL / CT-32HXC43G/UG	
M013	UR76EC0303A	BATTERY COVER, REMOTE / CT-32HXC43G/UG	


J
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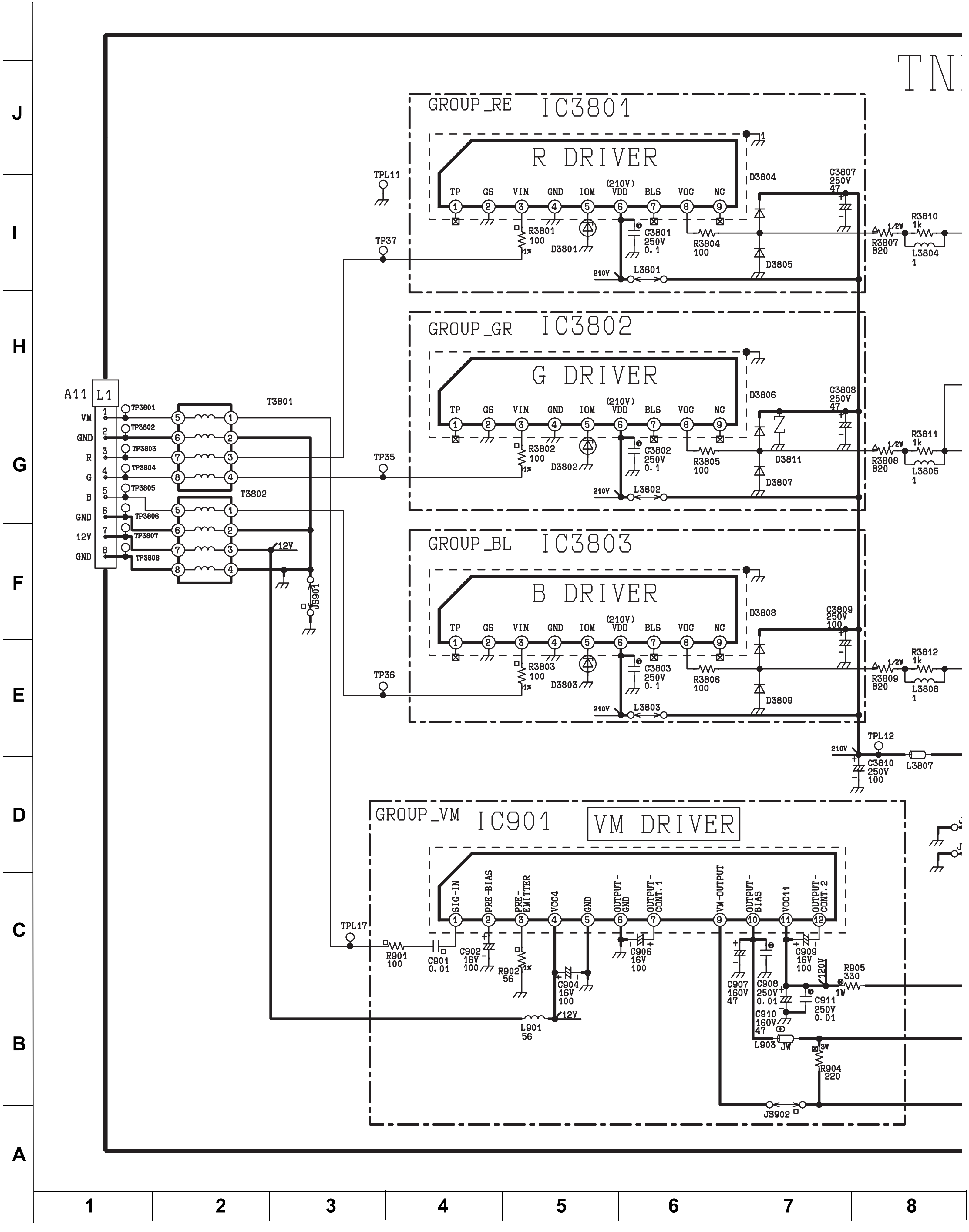
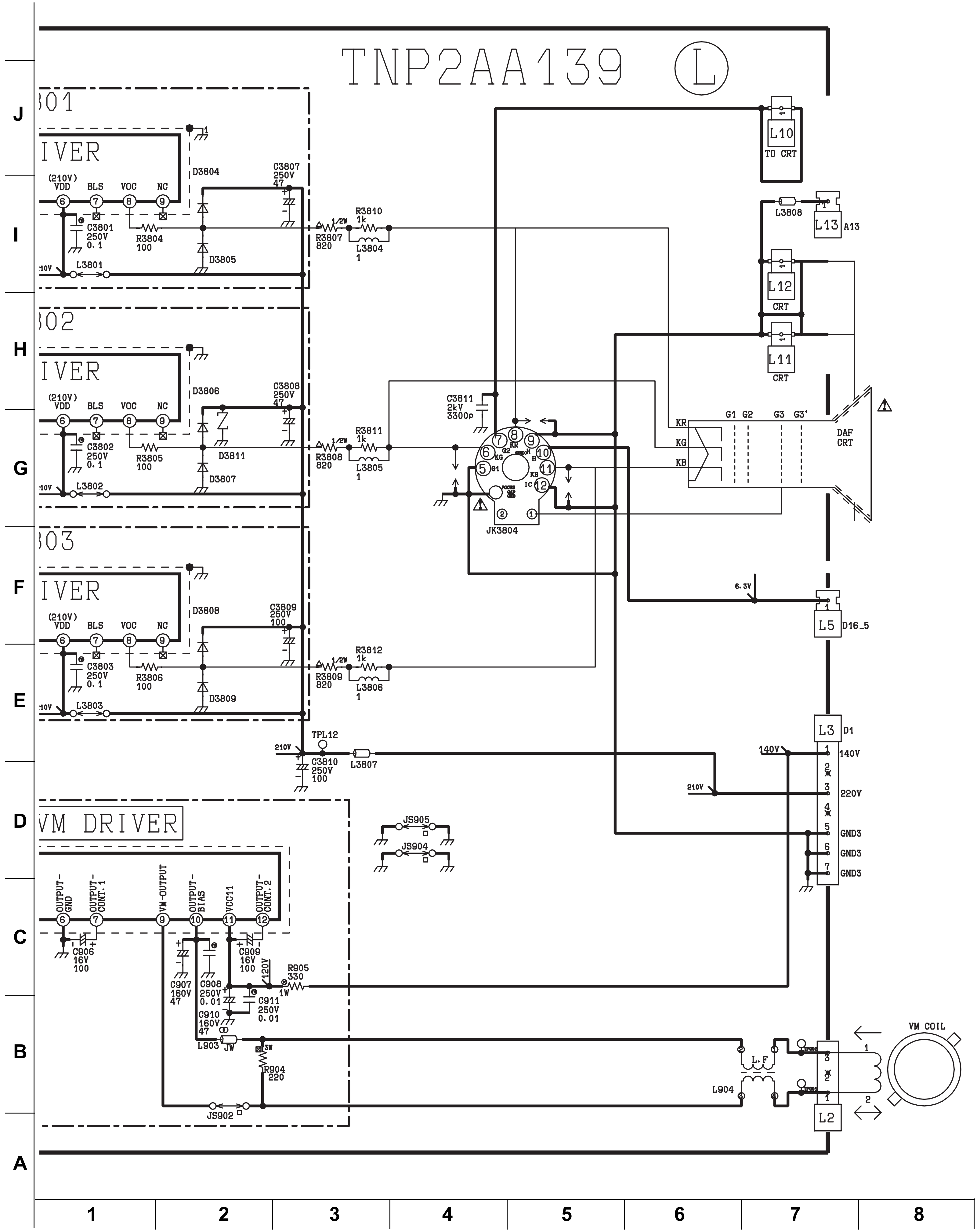
TNP2AA139
SEE REVERSE FOR ORDER NO.
1L
PbF
HV DANGER
JK3804
IC901
IC3801
IC3802
IC3803
R904
R905
L904
L901
L902
L903
L3
L5
L10
L11
L12
L13
L1
L2
TP901
TP902
TPL17
TPL11
TPL12
TP35
TP36
TP37
TP3801
TP3802
TP3803
TP3804
TP3805
TP3806
TP3807
TP3808
T3801
T3802
S3801
S3802
S3803
KB
H
HG
G2
KG
G1
KR
C902
C906
C909
C904
C908
C907
C910
C911
C3806
C3803
C3809
C3804
C3801
C3807
C3802
C3808
C3805
C3810
C3811
D3812
D3803
D3809
D3808
D3804
D3805
D3810
D3801
D3802
D3807
D3806
D3811
R3806
R3809
R3812
R3807
R3810
R3804
R3808
R3811
R3805
L3806
L3804
L3807
L3805
L3808

L-BOARD TNP2A139 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


TN
GROUP_RE
IC3801
R DRIVER
GROUP_GR
IC3802
G DRIVER
GROUP_BL
IC3803
B DRIVER
GROUP_VM
IC901
VM DRIVER
TP GS VIN GND IOM VDD BLS VOC NC
(210V)
SIG-IN PRE-BIAS PRE-EMITTER VCC4 GND OUTPUT-GND OUTPUT-CONT.1 VM-OUTPUT OUTPUT-BIAS VCC11 OUTPUT-CONT.2
A11
L1
VM GND R G B GND 12V GND
TP3801 TP3802 TP3803 TP3804 TP3805 TP3806 TP3807 TP3808
T3801
T3802
TPL11 TP37 TP35 TP36 TPL12 TPL17
R3801 100 1%
R3802 100 1%
R3803 100 1%
D3801 D3802 D3803
C3801 250V 0.1
C3802 250V 0.1
C3803 250V 0.1
R3804 100
R3805 100
R3806 100
D3804 D3805 D3806 D3807 D3808 D3809 D3811
C3807 250V 47
C3808 250V 47
C3809 250V 100
R3807 820 1/2W
R3808 820 1/2W
R3809 820 1/2W
R3810 1k
R3811 1k
R3812 1k
L3804 1
L3805 1
L3806 1
L3801 L3802 L3803
210V
C3810 250V 100
L3807
JS901
12V
R901 100
C901 0.01
C902 16V 100
R902 56 1%
C904 16V 100
C906 16V 100
C907 160V 47
C908 250V 0.01
C909 16V 100
C910 160V 47
C911 250V 0.01
120V
R905 330 1W
L901 56
L903 JW
R904 220 3W
JS902
J
A B C D E F G H I J
1 2 3 4 5 6 7 8

L-BOARD 1/2 TNP2A139 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


TNP2AA139 (L)
J
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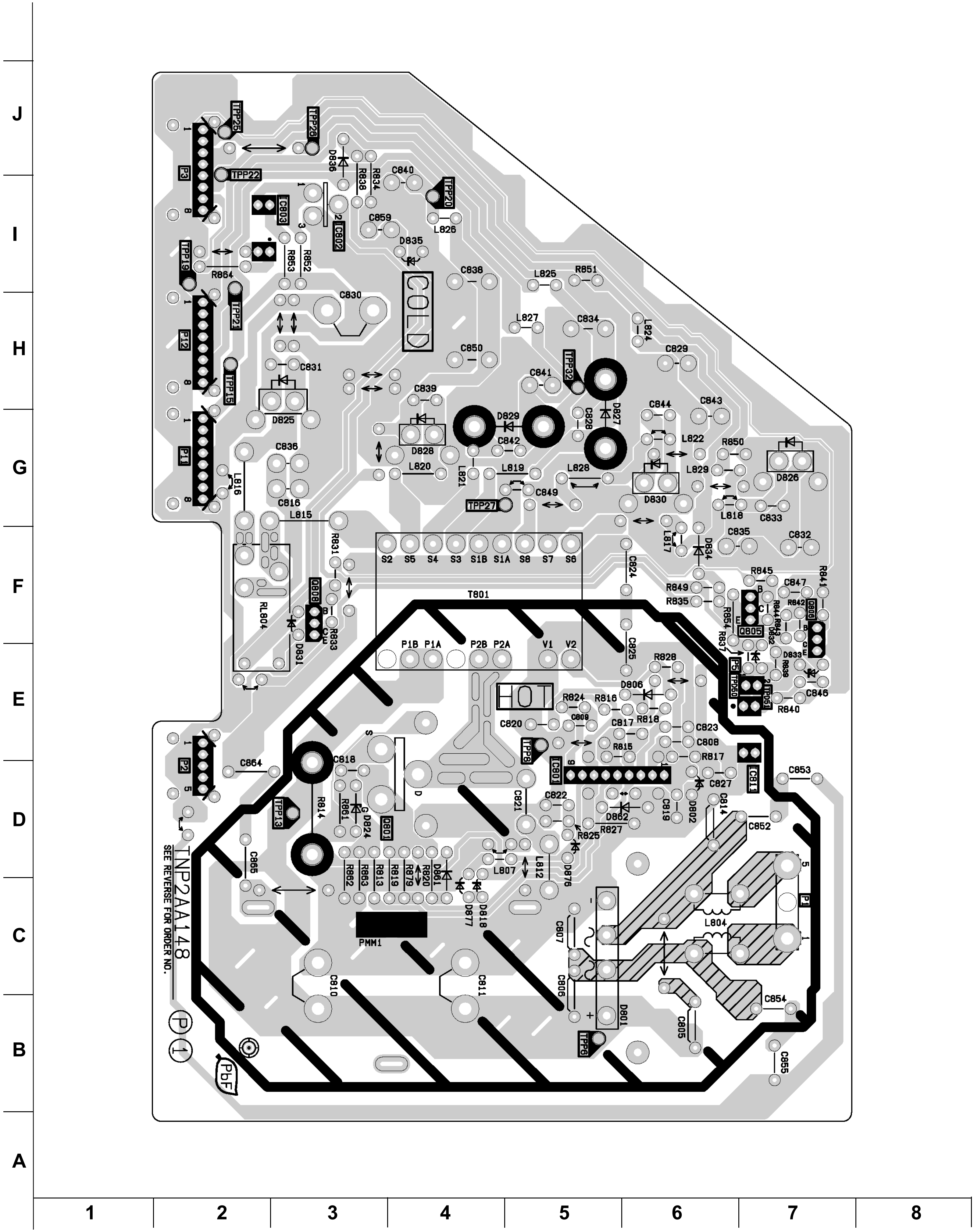
IVER
(210V) VDD
BLS
VOC
NC
D3804
C3807 250V 47
C3801 250V 0.1
R3804 100
D3805
L3801
10V
R3807 820
1/2W
R3810 1k
L3804 1
D3806
C3808 250V 47
C3802 250V 0.1
R3805 100
D3811
D3807
L3802
R3808 820
R3811 1k
L3805 1
D3808
C3809 250V 100
C3803 250V 0.1
R3806 100
D3809
L3803
R3809 820
R3812 1k
L3806 1
210V
TPL12
C3810 250V 100
L3807
C3811 2kV 3300p
JK3804
KR
KG
KB
G1
G2
H
IC
FOCUS GAP GND
G1 G2 G3 G3'
DAF CRT
L10 TO CRT
L3808
L13 A13
L12 CRT
L11 CRT
6.3V
L5 D16_5
L3 D1
140V
210V
220V
GND3
VM DRIVER
JS905
JS904
OUTPUT-GND
OUTPUT-CONT.1
VM-OUTPUT
OUTPUT-BIAS
VCC11
OUTPUT-CONT.2
C906 16V 100
C907 160V 47
C908 250V 0.01
C909 16V 100
120V
R905 330 1W
C910 160V 47
C911 250V 0.01
L903
JW
3W
R904 220
JS902
L904
L.F
TP902
TP901
L2
VM COIL

J
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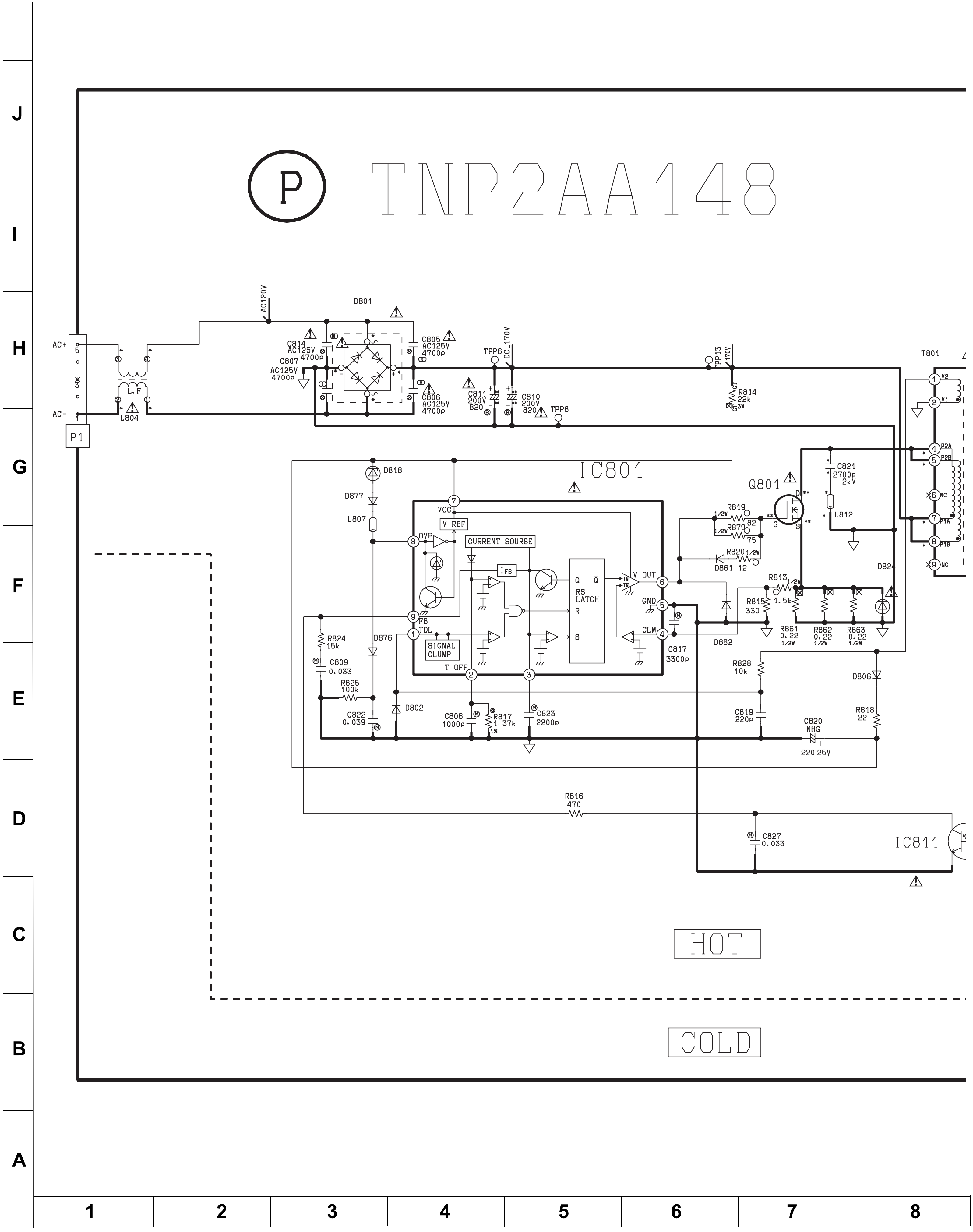
TPP25
TPP28
TPP22
TPP20
TPP19
TPP21
TPP15
TPP32
TPP27
TPP8
TPP13
TPP6
TPP60
TPP61
P3
P12
P11
P2
P5
P1
IC803
IC802
IC801
IC811
D836
R838
R834
C840
C859
L826
D835
COLD
HOT
R853
R852
R864
C830
C838
L825
R851
L827
C834
L824
C829
C850
C831
C841
C839
D825
D829
D828
D827
C828
C844
C843
L822
R850
C842
C836
L816
L820
L821
L819
L828
D830
L829
D826
C816
C849
L818
C833
L815
R831
S2
S5
S4
S3
S1B
S1A
S8
S7
S6
L817
D834
C835
C832
T801
C824
R845
C847
R841
R849
R835
Q805
Q806
Q808
RL804
D831
R833
P1B
P1A
P2B
P2A
V1
V2
C825
R828
D806
R824
R816
R818
C809
C820
C817
C823
C808
R815
R817
R854
R844
R843
R842
D832
D833
R837
R836
C846
R840
C864
C818
C853
C827
R814
R861
D824
Q801
C821
C822
D802
C819
D862
C814
C852
R825
R827
C865
R862
R863
R813
R819
R879
R820
D861
D877
D818
L807
L812
D876
PMM1
L804
C807
C806
C810
C811
D801
C854
C805
C855
TNP2AA148
SEE REVERSE FOR ORDER NO.
P1
PbF



Ⓟ TNP2AA148
AC+
AC-
P1
L.F
L804
AC120V
D801
C814
AC125V
4700p
C807
AC125V
4700p
C805
AC125V
4700p
C806
AC125V
4700p
TPP6
DC_170V
C811
200V
820
C810
200V
820
TPP8
TPP13
170V
R814
22k
3W
T801
V2
V1
P2A
P2B
NC
P1A
P1B
IC801
D818
D877
L807
VCC
V REF
OVP
CURRENT SOURSE
IFB
RS
LATCH
Q
R
S
V OUT
GND
CLM
FB
TDL
SIGNAL
CLUMP
T OFF
D876
R824
15k
C809
0.033
R825
100k
C822
0.039
D802
C808
1000p
R817
1.37k
1%
C823
2200p
C817
3300p
Q801
G
D
S
C821
2700p
2kV
L812
R819
82
1/2W
R879
75
1/2W
R820
12
1/2W
D861
R813
1.5k
1/2W
R815
330
D862
R861
0.22
1/2W
R862
0.22
1/2W
R863
0.22
1/2W
D824
R828
10k
C819
220p
D806
R818
22
C820
NHG
220 25V
R816
470
C827
0.033
IC811
HOT
COLD
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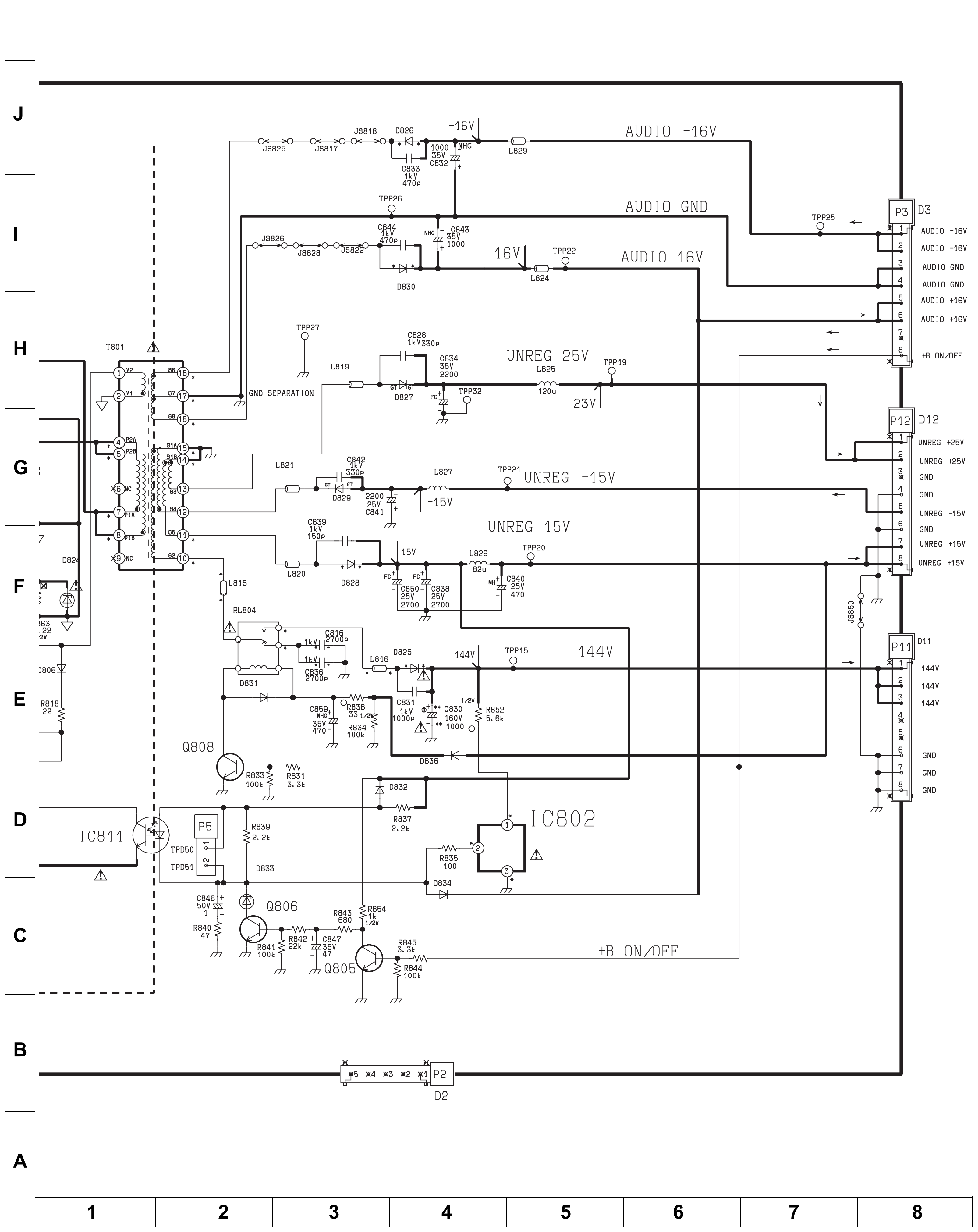
J
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7
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JS825
JS817
JS818
D826
-16V
1000
35V
C832
NHG
L829
C833
1kV
470p
AUDIO -16V
TPP26
AUDIO GND
P3
D3
TPP25
AUDIO -16V
AUDIO -16V
AUDIO GND
AUDIO GND
AUDIO +16V
AUDIO +16V
+B ON/OFF
JS826
JS828
JS822
C844
1kV
470p
NHG
C843
35V
1000
16V
TPP22
AUDIO 16V
L824
D830
TPP27
C828
1kV
330p
T801
V2
V1
S6
S7
S8
GND SEPARATION
L819
C834
35V
2200
UNREG 25V
L825
120u
TPP19
GT
D827
FC
TPP32
23V
P12
D12
UNREG +25V
UNREG +25V
GND
GND
UNREG -15V
GND
UNREG +15V
UNREG +15V
P2A
P2B
S1A
S1B
S3
S4
S5
S2
P1A
P1B
NC
NC
L821
C842
1kV
330p
L827
TPP21
UNREG -15V
D829
2200
25V
C841
-15V
UNREG 15V
C839
1kV
150p
15V
L826
82u
TPP20
L820
D828
C850
25V
2700
C838
25V
2700
MH
C840
25V
470
D824
L815
RL804
C816
2700p
1kV
1kV
C836
2700p
L816
D825
144V
TPP15
144V
JS850
P11
D11
144V
144V
144V
GND
GND
GND
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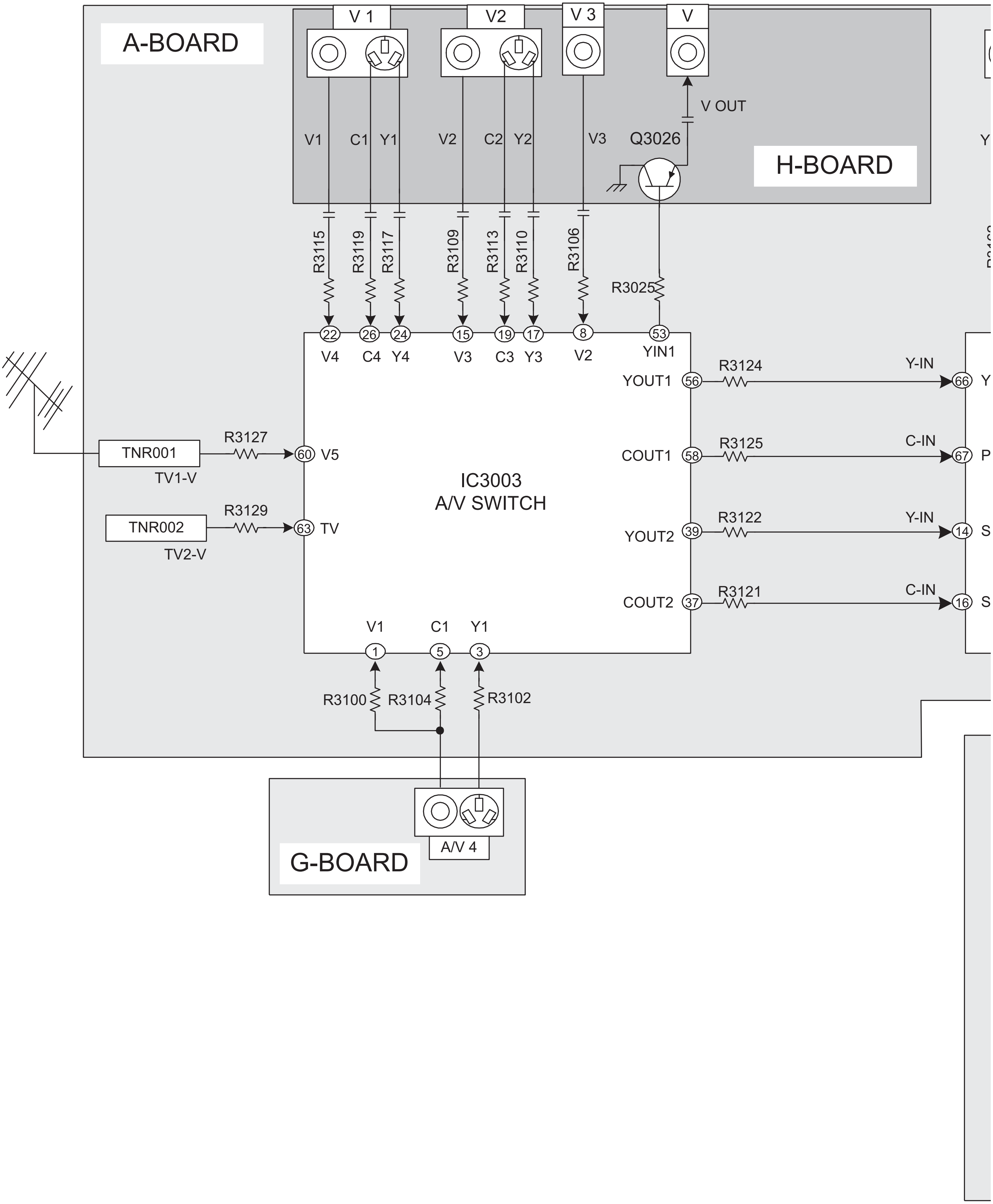
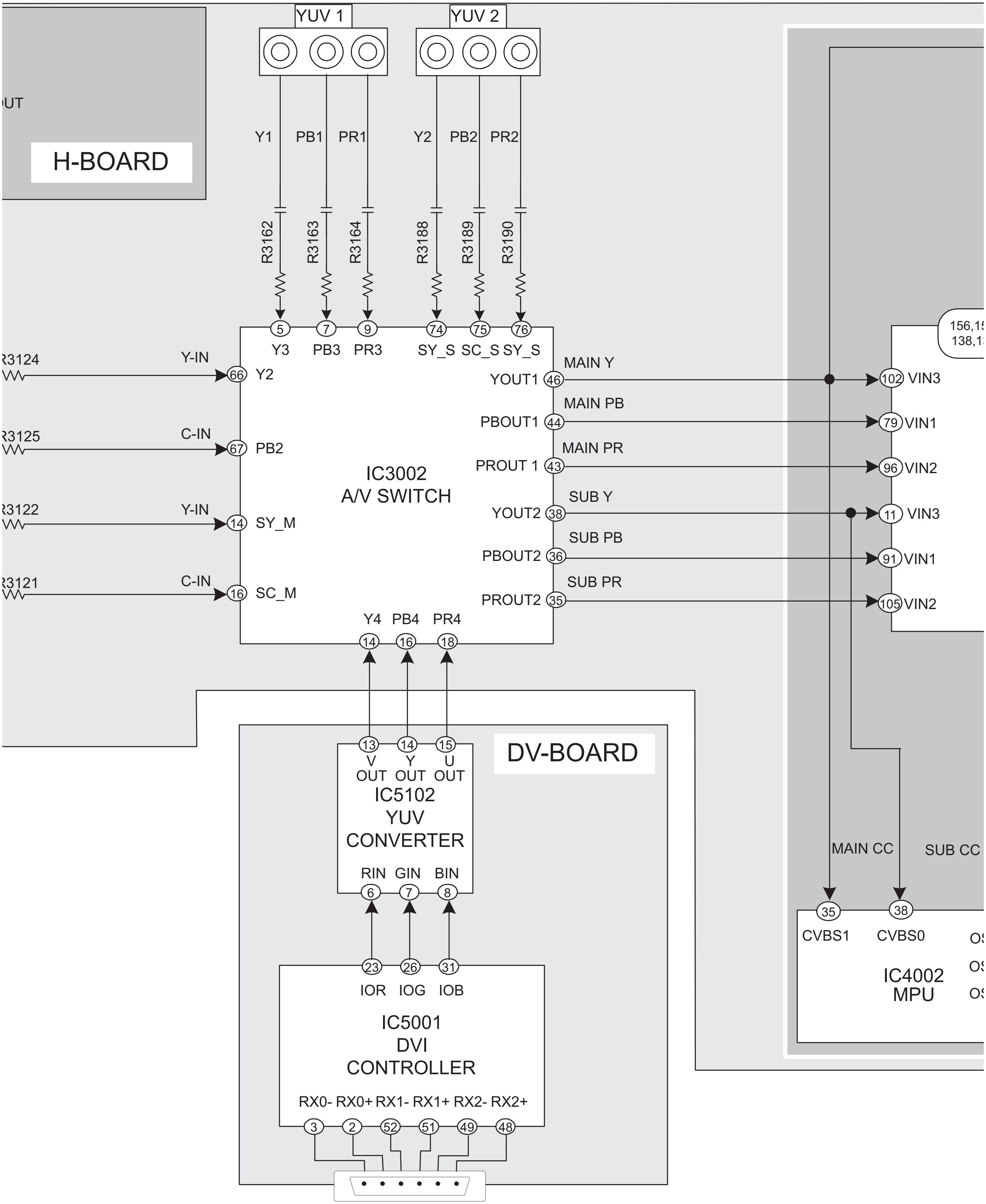
1kV
1000p
C830
160V
1000
R852
5.6k
1/2W
C859
NHG
35V
470
R838
33
1/2W
R834
100k
R818
22
Q808
D836
R833
100k
R831
3.3k
D832
R837
2.2k
IC802
IC811
P5
TPD50
TPD51
R839
2.2k
D833
R835
100
D834
C846
50V
1
R840
47
Q806
R843
680
R854
1k
1/2W
R841
100k
R842
22k
C847
35V
47
Q805
R845
3.3k
R844
100k
+B ON/OFF
P2
D2


A-BOARD
H-BOARD
G-BOARD
V 1
V2
V 3
V
V OUT
V1
C1
Y1
V2
C2
Y2
V3
Q3026
R3115
R3119
R3117
R3109
R3113
R3110
R3106
R3025
22
26
24
15
19
17
8
53
V4
C4
Y4
V3
C3
Y3
V2
YIN1
YOUT1
56
R3124
Y-IN
66
COUT1
58
R3125
C-IN
67
YOUT2
39
R3122
Y-IN
14
COUT2
37
R3121
C-IN
16
IC3003
A/V SWITCH
TNR001
TV1-V
R3127
60
V5
TNR002
TV2-V
R3129
63
TV
V1
C1
Y1
1
5
3
R3100
R3104
R3102
A/V 4

VIDEO BLOCK DIAGRAM 1/4 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG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YUV 2
H-BOARD
UT
Y1
PB1
PR1
Y2
PB2
PR2
R3162
R3163
R3164
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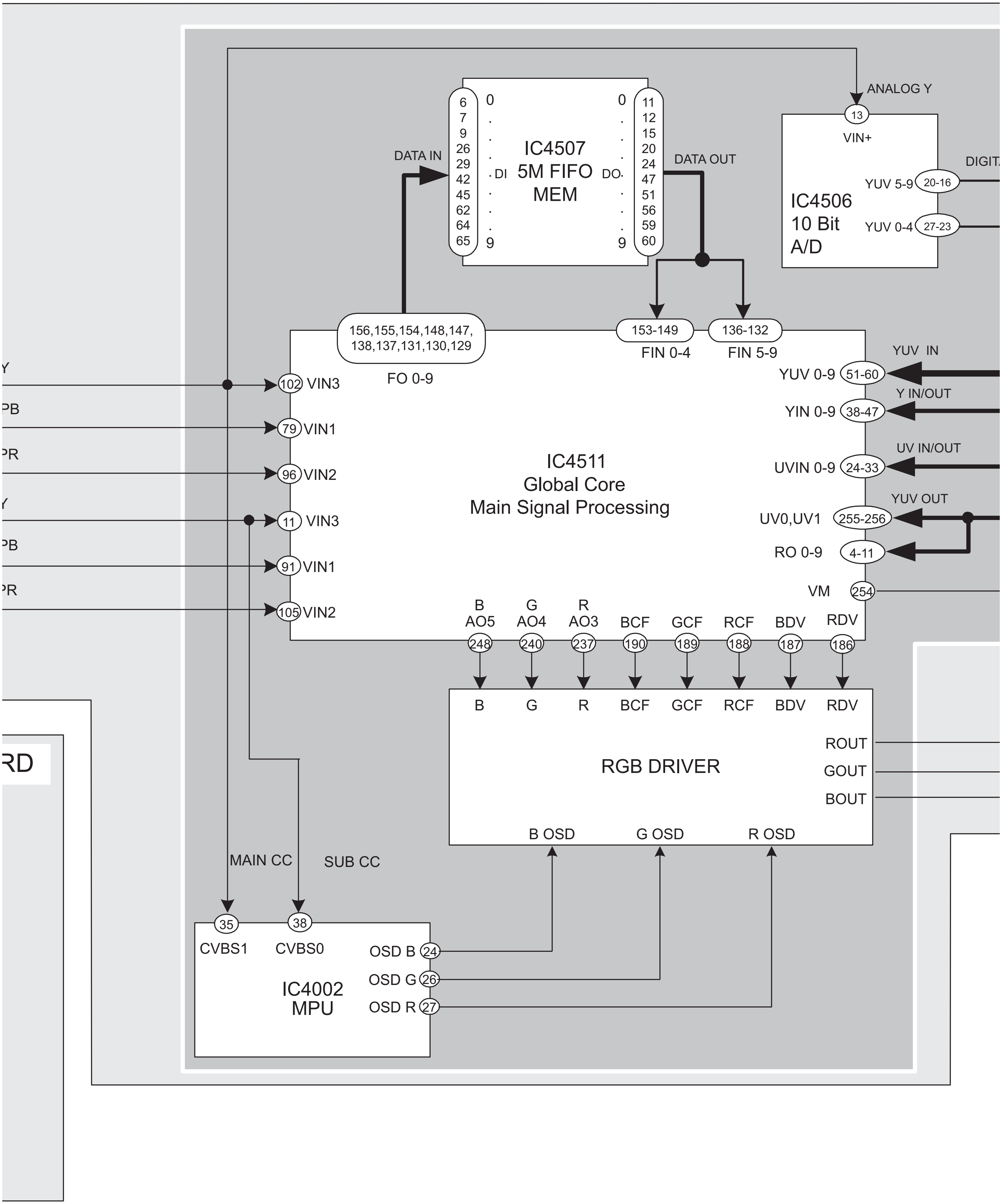
R3189
R3190
5
7
9
74
75
76
Y3
PB3
PR3
SY_S
SC_S
SY_S
R3124
Y-IN
66
Y2
R3125
C-IN
67
PB2
R3122
Y-IN
14
SY_M
R3121
C-IN
16
SC_M
IC3002
A/V SWITCH
MAIN Y
YOUT1
46
MAIN PB
PBOUT1
44
MAIN PR
PROUT 1
43
SUB Y
YOUT2
38
SUB PB
PBOUT2
36
SUB PR
PROUT2
35
Y4
PB4
PR4
14
16
18
156,15
138,13
102
VIN3
79
VIN1
96
VIN2
11
VIN3
91
VIN1
105
VIN2
DV-BOARD
13
14
15
V OUT
Y OUT
U OUT
IC5102
YUV
CONVERTER
RIN
GIN
BIN
6
7
8
23
26
31
IOR
IOG
IOB
IC5001
DVI
CONTROLLER
RX0-
RX0+
RX1-
RX1+
RX2-
RX2+
3
2
52
51
49
48
MAIN CC
SUB CC
35
38
CVBS1
CVBS0
IC4002
MPU
OS
OS
OS

VIDEO BLOCK DIAGRAM 2/4 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG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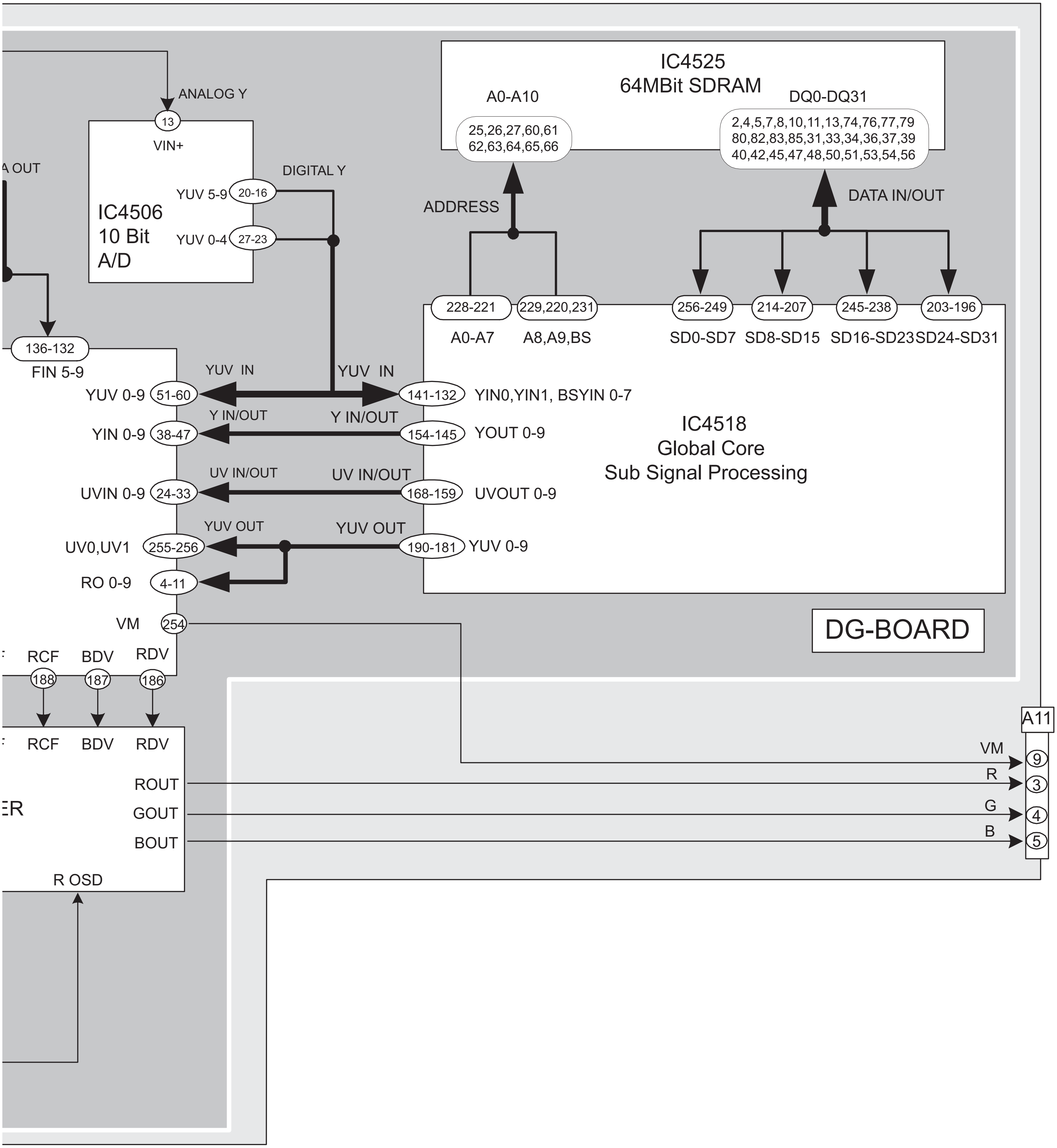
VIN+
IC4506
10 Bit
A/D
YUV 5-9
20-16
YUV 0-4
27-23
DIGIT
IC4507
5M FIFO
MEM
DATA IN
DATA OUT
DI
DO
0
9
6
7
9
26
29
42
45
62
64
65
11
12
15
20
24
47
51
56
59
60
156,155,154,148,147,
138,137,131,130,129
FO 0-9
153-149
FIN 0-4
136-132
FIN 5-9
IC4511
Global Core
Main Signal Processing
Y
102 VIN3
PB
79 VIN1
PR
96 VIN2
Y
11 VIN3
PB
91 VIN1
PR
105 VIN2
YUV IN
YUV 0-9
51-60
Y IN/OUT
YIN 0-9
38-47
UV IN/OUT
UVIN 0-9
24-33
YUV OUT
UV0,UV1
255-256
RO 0-9
4-11
VM
254
B
AO5
248
G
AO4
240
R
AO3
237
BCF
190
GCF
189
RCF
188
BDV
187
RDV
186
RGB DRIVER
B
G
R
BCF
GCF
RCF
BDV
RDV
ROUT
GOUT
BOUT
B OSD
G OSD
R OSD
RD
MAIN CC
SUB CC
IC4002
MPU
35
CVBS1
38
CVBS0
OSD B 24
OSD G 26
OSD R 27

VIDEO BLOCK DIAGRAM 3/4 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


IC4525
64MBit SDRAM
A0-A10
25,26,27,60,61
62,63,64,65,66
DQ0-DQ31
2,4,5,7,8,10,11,13,74,76,77,79
80,82,83,85,31,33,34,36,37,39
40,42,45,47,48,50,51,53,54,56
ADDRESS
DATA IN/OUT
ANALOG Y
13
VIN+
A OUT
IC4506
10 Bit
A/D
YUV 5-9
20-16
YUV 0-4
27-23
DIGITAL Y
228-221
229,220,231
256-249
214-207
245-238
203-196
A0-A7
A8,A9,BS
SD0-SD7
SD8-SD15
SD16-SD23
SD24-SD31
136-132
FIN 5-9
YUV IN
YUV IN
YUV 0-9
51-60
141-132
YIN0,YIN1, BSYIN 0-7
Y IN/OUT
Y IN/OUT
YIN 0-9
38-47
154-145
YOUT 0-9
IC4518
Global Core
Sub Signal Processing
UV IN/OUT
UV IN/OUT
UVIN 0-9
24-33
168-159
UVOUT 0-9
YUV OUT
YUV OUT
UV0,UV1
255-256
190-181
YUV 0-9
RO 0-9
4-11
VM
254
DG-BOARD
RCF
BDV
RDV
188
187
186
RCF
BDV
RDV
ROUT
ER
GOUT
BOUT
R OSD
A11
VM
9
R
3
G
4
B
5

VIDEO BLOCK DIAGRAM 4/4 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG

A - BOARD - TNP2AH050/AB

IC3002

1	5.22	41	4.58
2	4.90	42	0.00
3	4.90	43	4.56
4	0.00	44	4.56
5	4.74	45	0.00
6	0.00	46	4.57
7	4.76	47	9.14
8	5.10	48	4.79
9	4.76	49	0.00
10	0.39	50	4.78
11	4.56	51	5.10
12	4.56	52	4.78
13	0.00	53	0.45
14	4.76	54	4.56
15	0.00	55	4.56
16	4.77	56	0.00
17	5.09	57	4.76
18	4.77	58	0.00
19	0.40	59	4.75
20	4.56	60	5.10
21	4.56	61	4.76
22	0.00	62	0.48
23	4.59	63	0.00
24	4.59	64	4.56
25	0.00	65	0.00
26	4.62	66	0.00
27	4.63	67	4.74
28	0.00	68	0.00
29	0.00	69	0.00
30	4.62	70	4.56
31	9.14	71	4.56
32	4.60	72	0.00
33	4.60	73	0.00
34	0.00	74	4.76
35	4.55	75	4.76
36	4.55	76	4.75
37	0.00	77	0.00
38	4.56	78	4.56
39	4.56	79	4.56
40	4.56	80	0.00

IC3003

1	4.00	33	4.80
2	4.56	34	4.80
3	4.00	35	0.00
4	4.56	36	0.00
5	4.52	37	4.43
6	0.15	38	4.58
7	5.00	39	4.30
8	4.00	40	4.58
9	4.56	41	4.58
10	4.30	42	9.17
11	4.56	43	4.51
12	4.51	44	0.00
13	0.16	45	5.00
14	5.10	46	0.00
15	4.00	47	0.00
16	4.56	48	0.00
17	4.00	49	5.00
18	4.56	50	4.58
19	4.51	51	4.51
20	0.18	52	4.59
21	5.10	53	4.58
22	4.00	54	4.59
23	4.56	55	3.74
24	4.00	56	4.30
25	4.56	57	0.00
26	4.51	58	4.43
27	0.16	59	4.56
28	5.10	60	4.43
29	0.00	61	4.56
30	0.00	62	4.56
31	0.00	63	4.22
32	0.00	64	4.56

IC872

1	15.87
2	2.83
3	0.00
4	1.24
5	6.75

IC875

1	27.34
2	9.42
3	0.00
4	1.24
5	6.74

IC2451

1	4.57	16	9.18
2	4.63	17	4.78
3	4.62	18	0.00
4	4.58	19	3.97
5	4.58	20	3.97
6	4.62	21	4.57
7	4.62	22	4.63
8	4.62	23	4.62
9	1.38	24	4.62
10	4.62	25	4.62
11	1.67	26	4.60
12	1.67	27	4.60
13	4.90	28	4.60
14	4.90	29	4.63
15	0.00	30	4.57

IC2201

1	0.00	13	3.58
2	0.00	14	2.19
3	0.00	15	3.57
4	2.29	16	3.66
5	2.19	17	0.00
6	0.33	18	4.90
7	5.12	19	4.90
8	2.23	20	0.00
9	2.40	21	2.21
10	0.43	22	2.21
11	2.25	23	0.00
12	3.43	24	0.00

IC1004

1	0.00
2	0.00
3	0.00
4	0.00
5	2.17
6	0.00
7	0.00
8	3.32

IC871

1	15.87
2	5.41
3	0.00
4	1.24
5	6.77

IC2302

1	-16.97
2	-16.97
3	-0.13
4	17.03
5	9.25
6	5.17
7	0.00
8	2.55
9	0.00
10	0.00
11	0.00
12	5.23
13	0.00
14	-15.74
15	0.00
16	-5.43
17	0.00
18	0.00
19	0.00
20	0.00
21	9.20
22	17.03
23	0.00
24	-16.97
25	-6.54

IC4803

1	5.53
2	3.67
3	3.68
4	0.00
5	2.78
6	2.78
7	5.60
8	5.60
9	11.86

A - BOARD - TNP2AH050/AB

	Q007	Q802	Q803	Q880	Q2301	Q2302
B	0.71	0.71	0.00	3.32	15.92	15.92
E	0.00	0.00	0.00	3.32	10.90	10.90
C	0.00	0.00	15.91	-1.13	0.27	-0.12

	Q2304	Q2306	Q2307	Q2336	Q2337	Q2338
B	0.00	-0.11	0.00	0.00	0.00	0.00
E	0.00	0.00	-0.30	-0.13	-0.15	0.00
C	15.92	5.18	0.00	-0.14	15.91	-0.12

	Q2339	Q2340	Q2451	Q2452
B	0.00	0.00	4.60	4.60
E	-0.17	-0.18	3.97	3.96
C	5.94	-1.12	9.18	9.18

D - BOARD - TNPH0466AE

IC451	
1	0.00
2	-16.35
3	0.00
4	15.55
5	1.30
6	1.30
7	16.00
8	-14.68
9	15.84
10	-14.67

IC500	
1	142.6
2	142.6
3	143.8
4	143.9
5	137.5
6	143.9
7	143.9
8	150.0
9	149.7
10	150.5

IC511	
1	3.76
2	3.22
3	3.23
4	0.00
5	0.00
6	0.00
7	0.36
8	11.87

IC751	
1	3.97
2	7.10
3	5.54
4	0.00
5	1.50
6	0.64
7	9.47
8	11.87

IC1501	
1	0.00
2	5.90
3	5.16
4	0.00
5	4.68
6	4.80
7	0.63
8	11.87

IC752	
1	11.87
2	3.97
3	0.00
4	0.00
5	0.00
6	29.66
7	33.52
8	42.00

IC876	
1	16.02
2	11.88
3	0.00
4	16.02

D - BOARD - TNPH0466AE

	Q404	Q405	Q406	Q503	Q509	Q510	Q512	Q513
B	0.69	16.00	0.60	0.00	43.20	48.91	5.74	0.28
E	0.00	16.40	0.00	0.00	48.70	48.23	5.82	0.00
C	0.16	0.00	0.00	11.86	143.40	143.40	11.87	5.74

	Q551	Q562	Q752	Q754	Q804	Q854	Q860	Q861
B	0.00	3.76	1.41	-0.44	27.51	143.50	0.00	0.61
E	0.00	3.22	0.82	0.00	27.81	143.80	0.00	0.00
C	-102.20	126.30	5.55	7.05	0.00	0.00	0.63	0.00

	Q862	Q1503	Q1504	Q1505	Q1506
B	-0.56	18.97	2.22	4.55	0.38
E	0.00	18.47	1.64	4.61	0.00
C	0.63	266.2	18.47	11.87	4.56

	Q502	Q751	Q755	Q1501	Q1502
G	11.87	9.46	33.50	4.62	11.87
D	0.00	0.00	33.10	62.60	0.00
S	0.00	0.00	29.70	0.00	0.00

L - BOARD - TNP2AA139

IC3801	
1	6.66
2	0.00
3	2.44
4	0.00
5	4.35
6	210.80
7	21.53
8	144.50
9	0.00

IC3802	
1	6.68
2	0.00
3	2.49
4	0.00
5	4.19
6	210.80
7	21.58
8	140.40
9	0.00

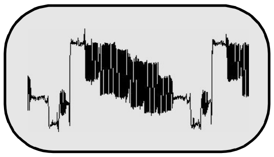
IC3803	
1	6.70
2	0.00
3	2.48
4	0.00
5	3.82
6	210.80
7	21.47
8	142.00
9	0.00

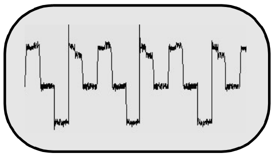
IC901	
1	1.38
2	2.97
3	0.70
4	11.69
5	0.00
6	0.00
7	0.19
8	69.00
9	69.00
10	141.00
11	141.00

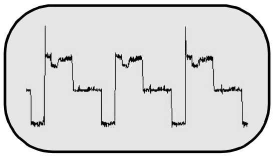
IC4905	
1	4.55
2	4.55
3	4.54
4	0.16
5	4.54
6	0.21
7	0.00
8	4.56
9	0.00
10	4.88
11	4.88
12	9.21
13	4.56
14	4.56
15	4.53
16	4.56
17	4.53
18	4.56

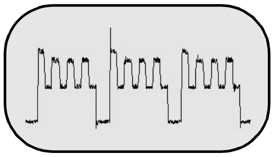
IC4904	
1	14.61
2	14.61
3	0.30
4	0.30
5	-16.37
6	2.82
7	2.83
8	2.83
9	2.83
10	15.96

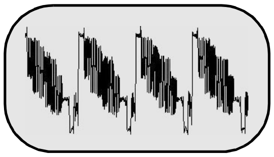
A-Board TNP2AH050/AB

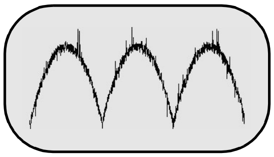

① **1.00 Vp-p**
TNR001 (MAIN VIDEO)

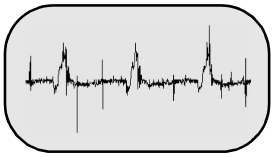

② **2.88 Vp-p**
A11 PIN 3 (RED OUT)

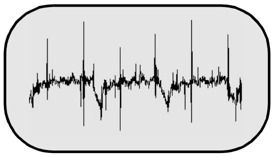

③ **2.88 Vp-p**
A11 PIN 4 (GREEN OUT)

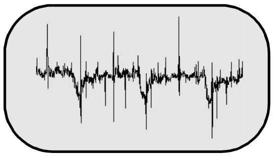

④ **2.88 Vp-p**
A11 PIN 5 (BLUE OUT)

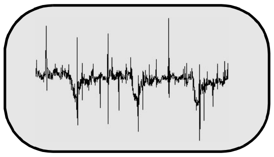

⑤ **2.06 Vp-p**
A22 PIN 17 (MAIN Y)

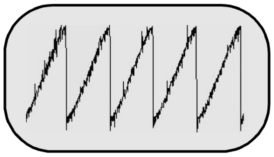

⑥ **0.80 Vp-p**
A23 PIN 1 (V-DAF)

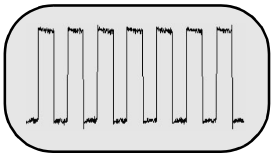

⑦ **0.37 Vp-p**
A23 PIN 2 (ABL)

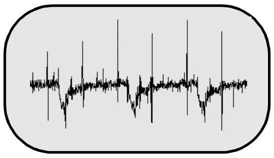

⑧ **0.15 Vp-p**
A23 PIN 3 (HHS REF)

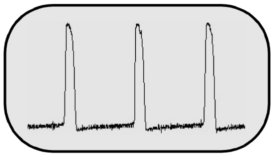

⑨ **0.12 Vp-p**
A23 PIN 7 (MOMENT BSW)

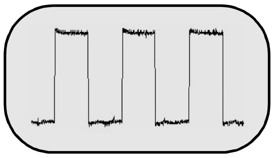

⑩ **0.13 Vp-p**
A23 PIN 10 (V_RASTER)

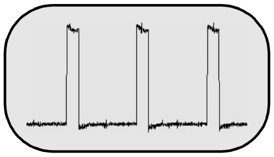

⑪ **0.86 Vp-p**
A23 PIN 13 (V_DRIVE)

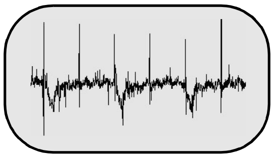

⑫ **3.36 Vp-p**
A23 PIN 30 (H_DAF)


⑬ **0.11 Vp-p**
A23 PIN 29 (EHT DET)

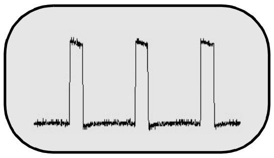

⑭ **3.8 Vp-p**
A23 PIN 28 (FBP)


⑮ **3.4 Vp-p**
A23 PIN 27 (H DRIVE)

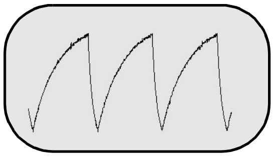

⑯ **3.4 Vp-p**
A23 PIN 26 (EW DRIVE)


⑰ **0.11 Vp-p**
A23 PIN 25 (H RASTER)

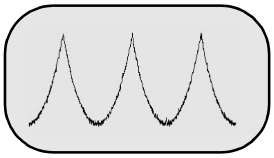
D-Board TNPH0466AE



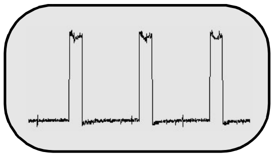
① **12.6 Vp-p**
IC751 PIN 1



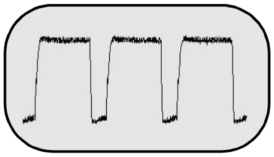
② **9.12 Vp-p**
IC751 PIN 2



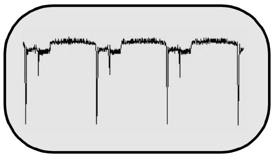
③ **5.92 Vp-p**
IC751 PIN 3



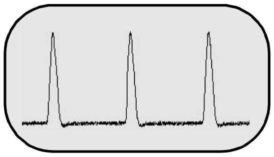
④ **3.44 Vp-p**
IC751 PIN 6



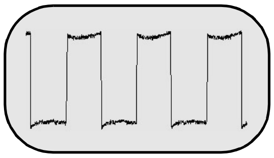
⑤ **12.4 Vp-p**
IC751 PIN 7



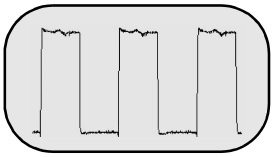
⑥ **14.0 Vp-p**
Q551-B



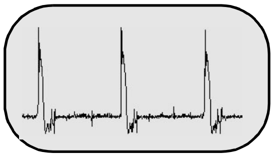
⑦ **1.56 KVp-p**
Q551-C



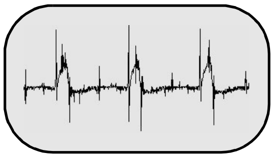
⑧ **20.4 Vp-p**
Q501-D



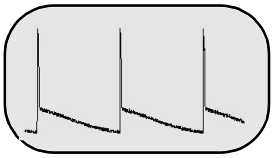
⑨ **11.5 Vp-p**
Q501-G



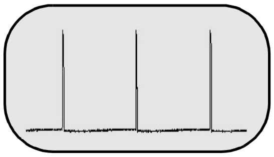
⑩ **3.4 Vp-p**
Q502-D



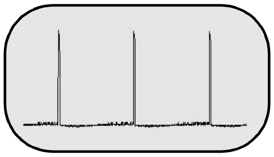
⑪ **0.82 Vp-p**
Q502-G



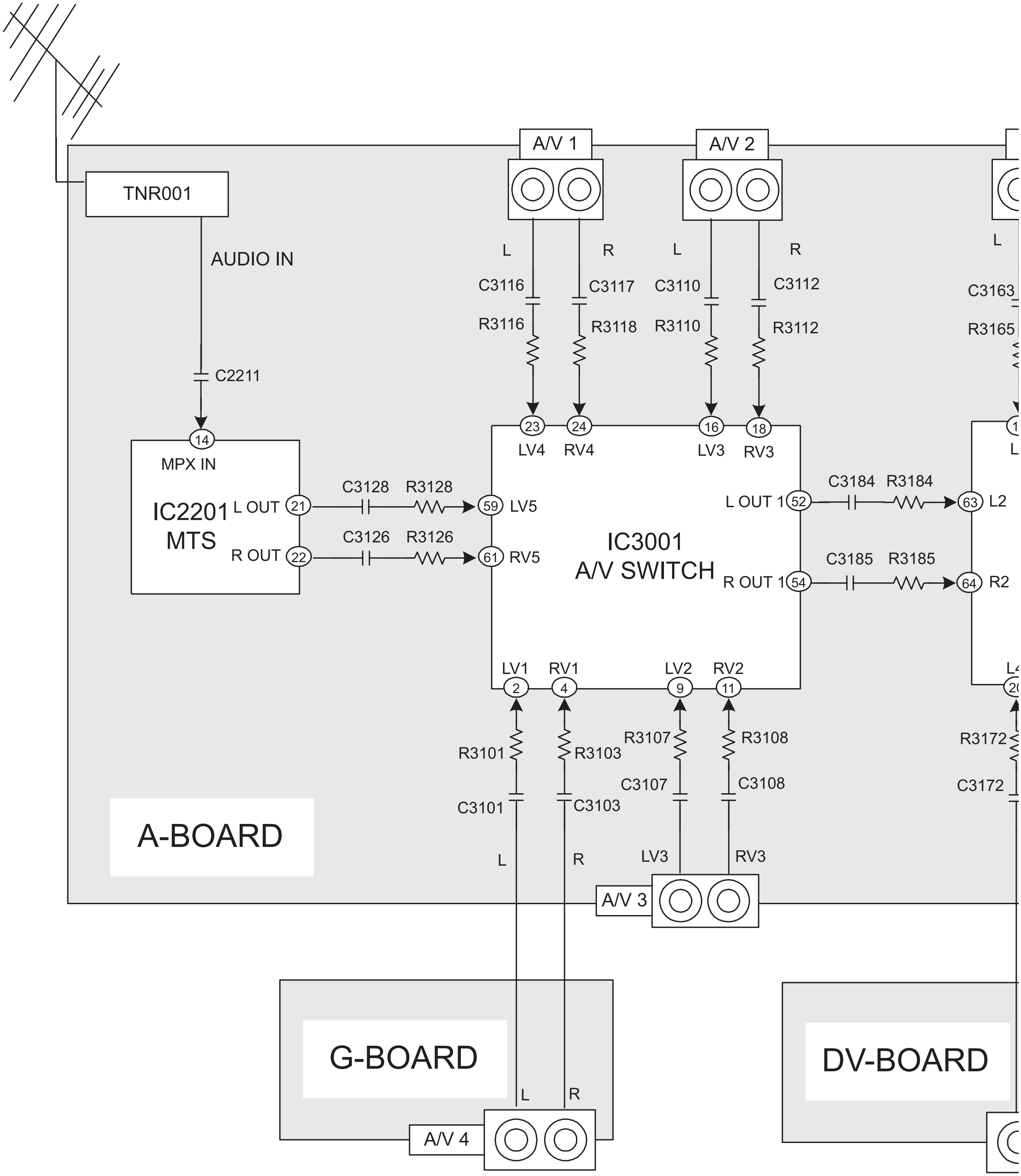
⑫ **84.0 Vp-p**
IC451 PIN 3



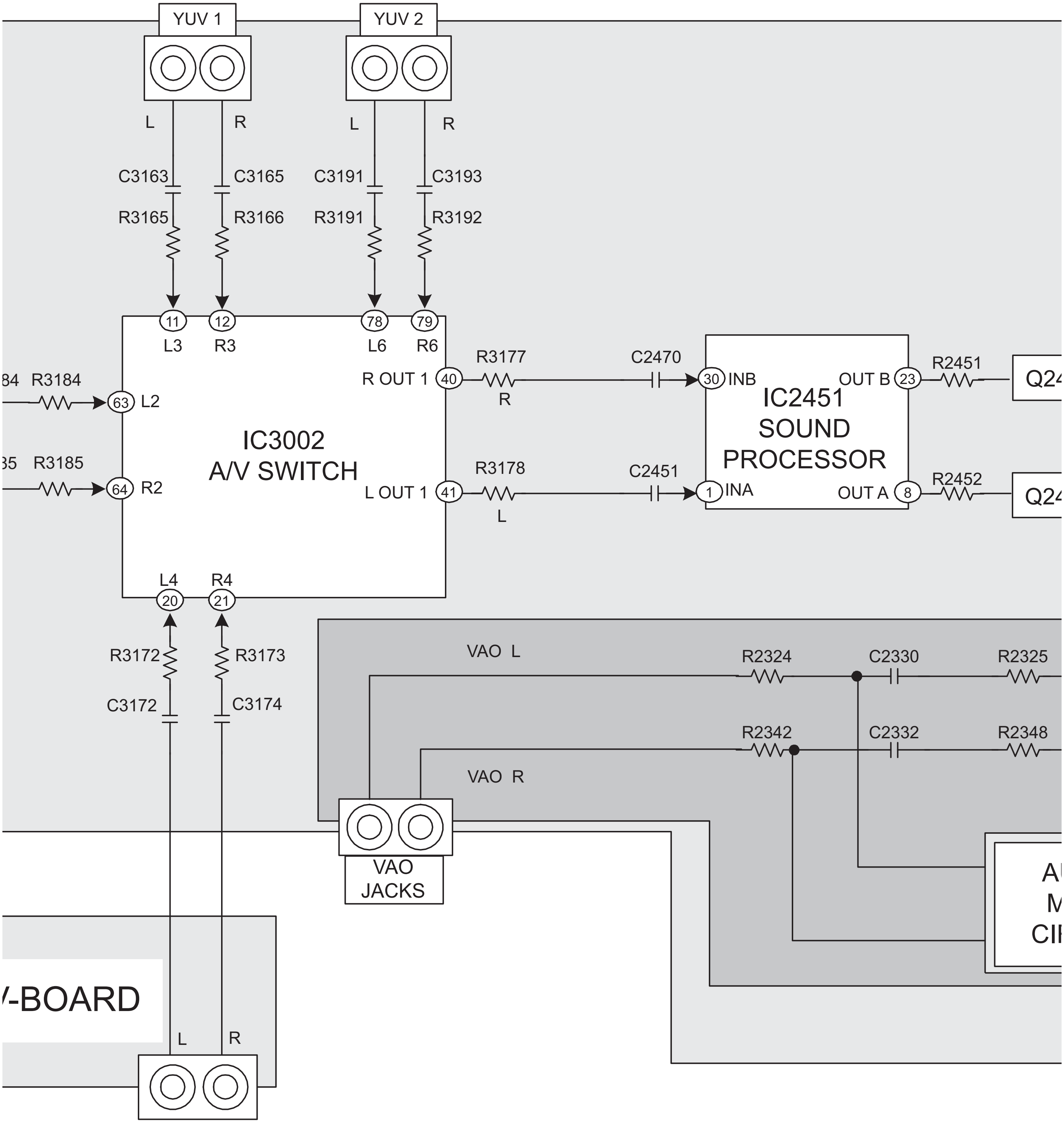
⑬ **64.8 Vp-p**
IC451 PIN 4



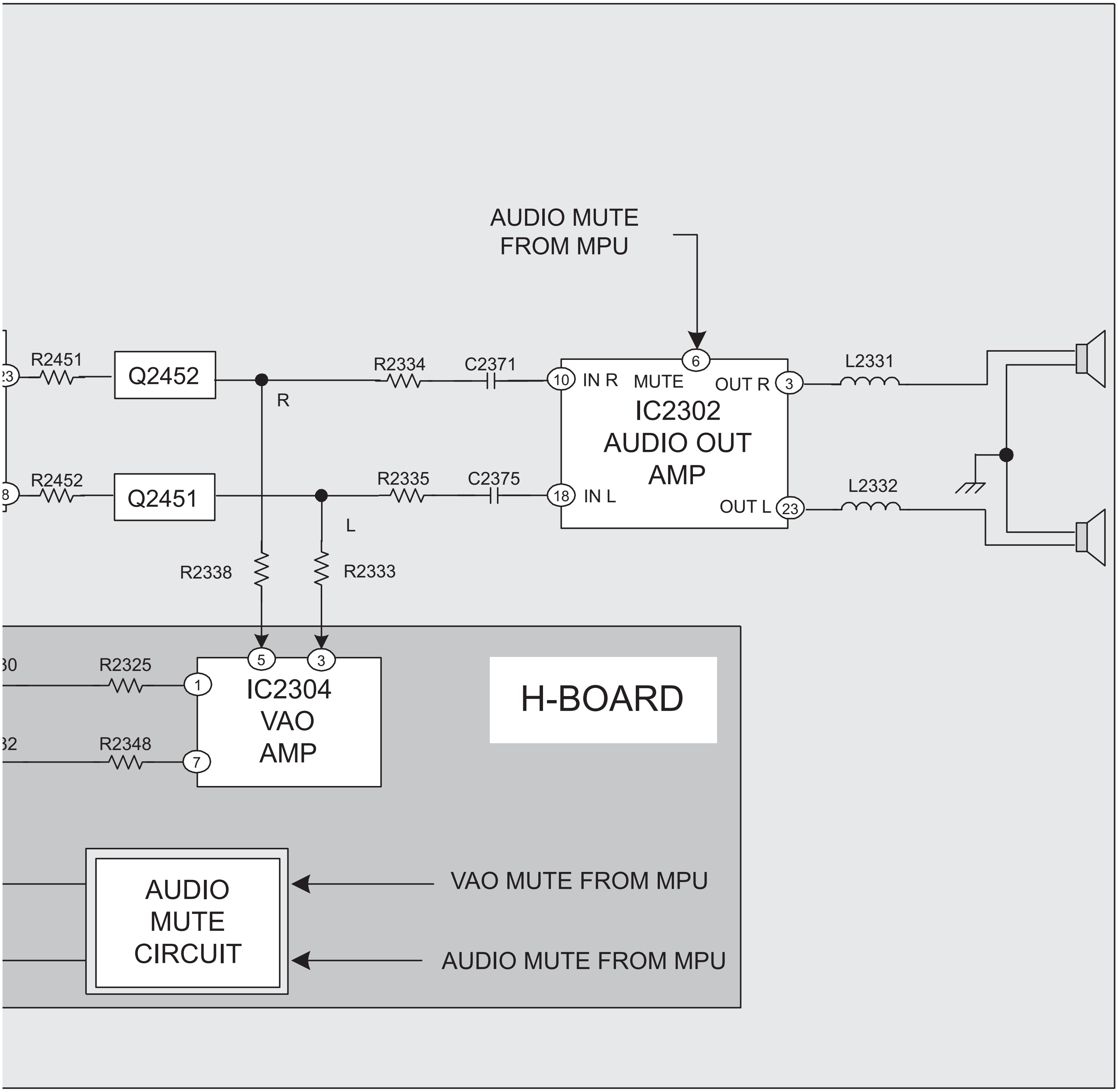
⑭ **31.6 Vp-p**
IC451 PIN 8

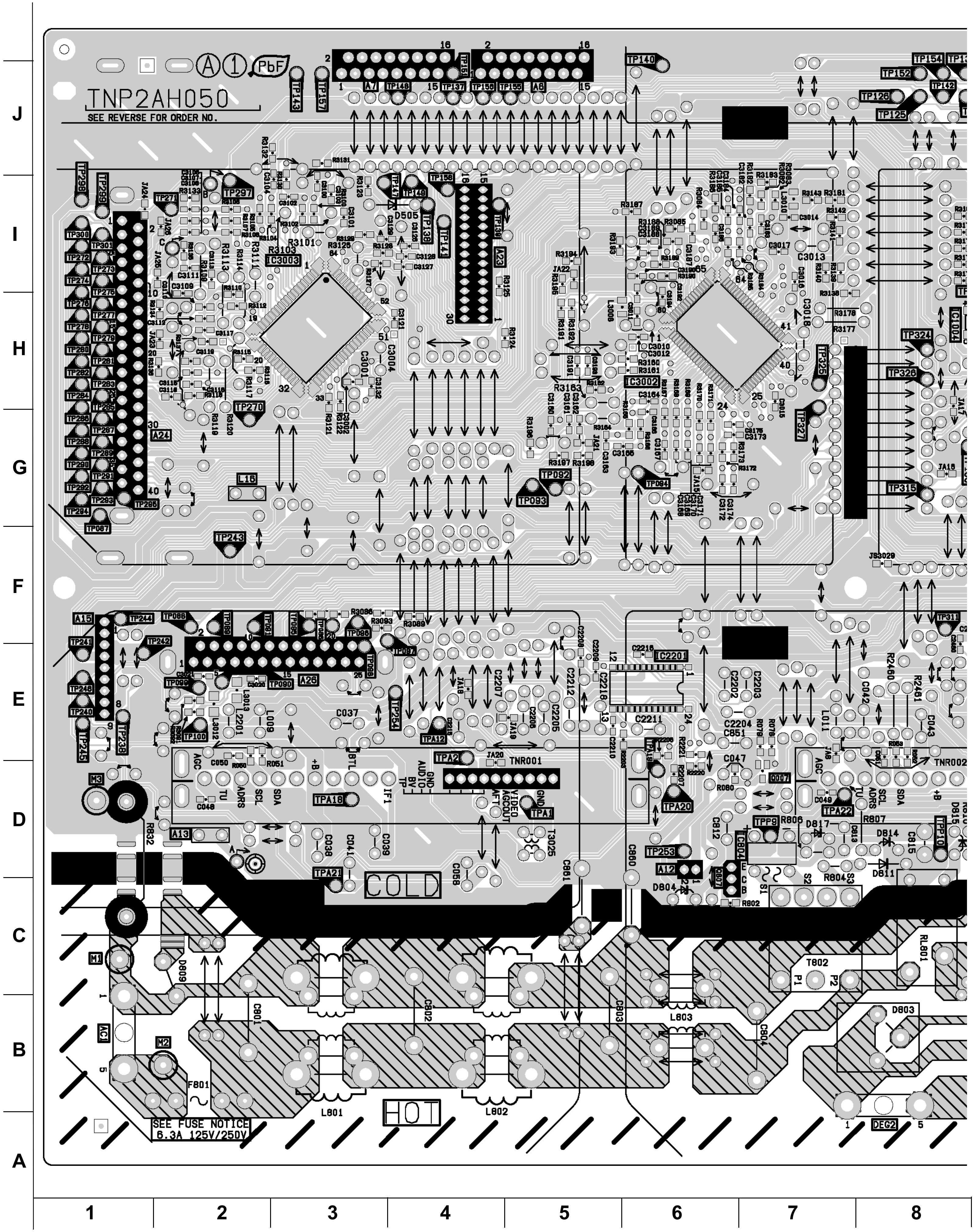

TNR001
AUDIO IN
C2211
14
MPX IN
IC2201
MTS
L OUT
21
R OUT
22
C3128
R3128
C3126
R3126
A/V 1
L
R
C3116
C3117
R3116
R3118
A/V 2
L
R
C3110
C3112
R3110
R3112
23
24
16
18
LV4
RV4
LV3
RV3
59
LV5
61
RV5
IC3001
A/V SWITCH
L OUT 1
52
R OUT 1
54
C3184
R3184
C3185
R3185
63
L2
64
R2
L
C3163
R3165
LV1
RV1
LV2
RV2
2
4
9
11
R3101
R3103
R3107
R3108
C3101
C3103
C3107
C3108
L
R
LV3
RV3
A/V 3
R3172
C3172
A-BOARD
G-BOARD
L
R
A/V 4
DV-BOARD

AUDIO BLOCK DIAGRAM 1/3 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG

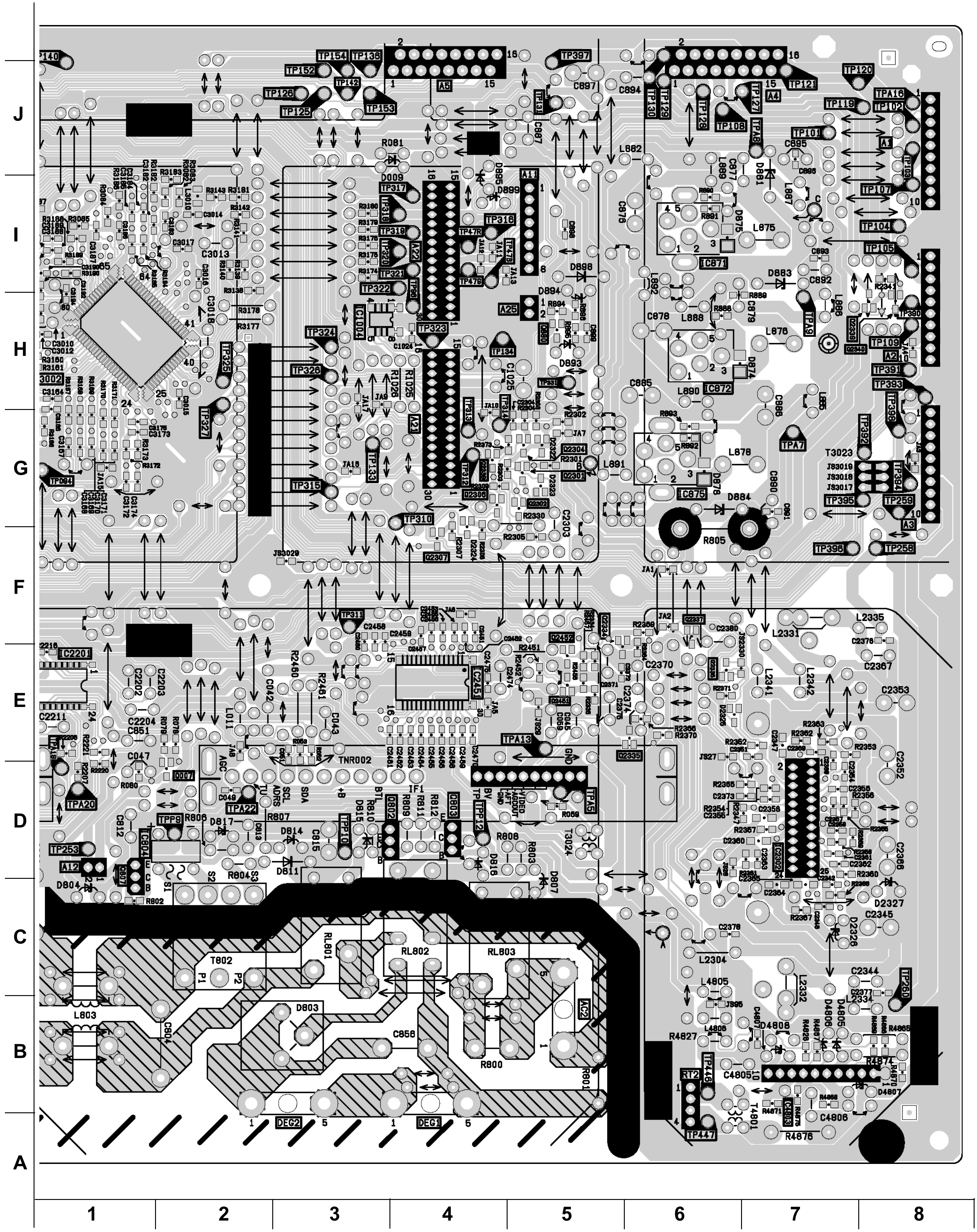

YUV 1
YUV 2
L
R
L
R
C3163
C3165
C3191
C3193
R3165
R3166
R3191
R3192
11
12
78
79
L3
R3
L6
R6
84
R3184
63
L2
35
R3185
64
R2
IC3002
A/V SWITCH
R OUT 1
40
L OUT 1
41
R3177
R
R3178
L
C2470
C2451
30
INB
1
INA
IC2451
SOUND
PROCESSOR
OUT B
23
OUT A
8
R2451
R2452
Q24
Q24
L4
R4
20
21
R3172
R3173
C3172
C3174
VAO L
VAO R
R2324
C2330
R2325
R2342
C2332
R2348
VAO
JACKS
AU
M
CIR
/-BOARD
L
R

AUDIO BLOCK DIAGRAM 2/3 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


AUDIO MUTE
FROM MPU
R2451
Q2452
R2334
C2371
6
10
IN R
MUTE
OUT R
3
L2331
IC2302
AUDIO OUT
AMP
R
R2452
Q2451
R2335
C2375
18
IN L
OUT L
23
L2332
L
R2338
R2333
5
3
R2325
1
IC2304
VAO
AMP
R2348
7
H-BOARD
AUDIO
MUTE
CIRCUIT
VAO MUTE FROM MPU
AUDIO MUTE FROM MPU


TNP2AH050
SEE REVERSE FOR ORDER NO.
PbF
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
IC3003
IC3002
IC2201
IC804
A7
A6
A23
A24
A26
A15
A13
A12
L16
TNR001
TNR002
COLD
HOT
SEE FUSE NOTICE
6.3A 125V/250V
F801
L801
L802
L803
C801
C802
C803
C804
T802
RL801
D803
DEG2
M1
M2
M3
AC1
R832
D809
S1
S2
S3
R804
D811
D804
Q007
C860
C861
T3025
TP140
TP154
TP152
TP126
TP125
TP142
TP324
TP326
TP325
TP327
TP315
TP311
TP297
TP270
TP243
TP093
TP092
TP094
TP264
TPA12
TPA2
TPA1
TPA18
TPA20
TPA22
TPA21
TPP9
TPP10
TP253
AGC
TU
ADRS
SCL
SDA
+B
IF1
BTL
GND
AUDIO
BY
TP
VIDEO
AGCOUT
AFT

A-BOARD 1/2 TNP2AH050 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


J
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C
B
A
1
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3
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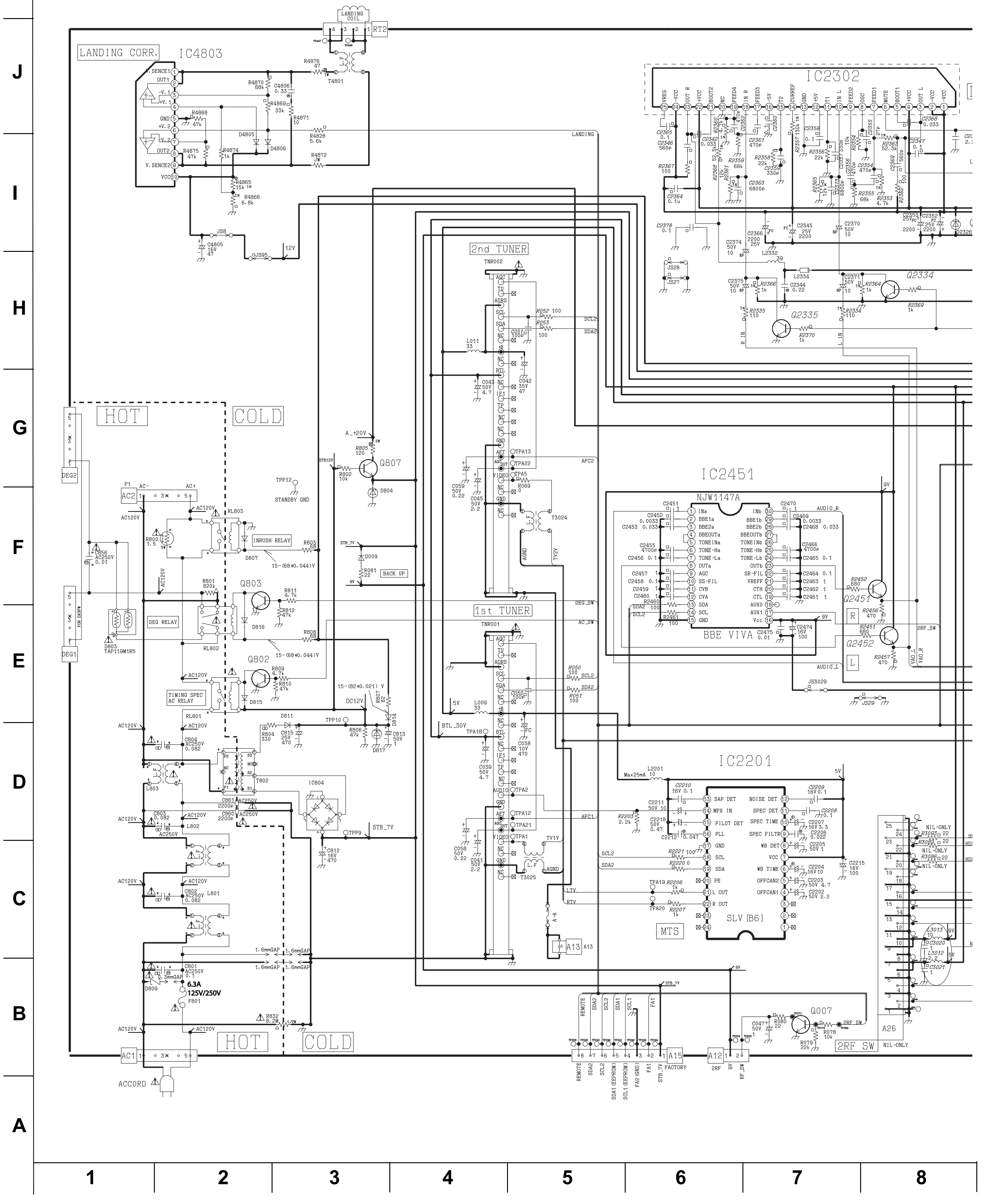
5
6
7
8
A5
A4
A1
A2
A3
A11
A12
A21
A22
A25
TP140
TP154
TP138
TP152
TP126
TP125
TP142
TP153
TP397
TP131
TP130
TP129
TP128
TP127
TP121
TP120
TPA16
TP119
TP102
TP108
TPA8
TP101
TP103
TP107
TP104
TP105
TP390
TP109
TP391
TP393
TP398
TP392
TP394
TP395
TP259
TP396
TP258
TP317
TP318
TP319
TP320
TP321
TP322
TP316
TP47R
TP47B
TP324
TP323
TP326
TP325
TP327
TP315
TP134
TP331
TP313
TP314
TP312
TP310
TP311
TP133
TP394
TP084
TPA9
TPA7
TPA13
TPA5
TPA20
TPA22
TPA18
TPP9
TPP10
TPP12
TP253
TP260
TP446
TP447
IC1004
IC871
IC872
IC875
IC2201
IC804
IC2302
Q2304
Q2301
Q2306
Q2307
Q2303
Q2452
Q2451
Q2335
Q2337
Q007
Q802
Q803
Q807
T3023
T3024
T4801
T802
RL801
RL802
RL803
R805
R800
R801
R804
R802
R806
R807
R808
R803
R4827
R4876
R4874
L803
L875
L876
L878
L888
L890
L891
L882
L892
L2335
L2331
L2341
L2342
L2304
L4805
L2332
L2334
D803
D804
D807
D811
D814
D815
D816
D817
D884
D883
D874
D875
D878
D881
D893
D894
D898
D899
D009
D2327
D2326
D4805
D4806
D4807
D4808
C856
C804
C897
C894
C876
C878
C879
C865
C886
C890
C2370
C2353
C2352
C2366
C2345
C2344
C2367
C4805
C4806
C2202
C2203
C2204
C2211
C851
C047
C812
C042
C043
C815
C3013
C3018
C1025
C2303
C2451
C2458
C2459
C2474
R2460
R2461
R2451
TNR002
TU
ADRS
SCL
SDA
+B
BTL
IF1
AGC
BV
TP
GND
VIDEO
AGOUT
AFT
S1
S2
S3
P1
P2
RT2
AC2
DEG1
DEG2
JS3029
JA1
JA2
JS3019
JS3018
JS3017
2
16
1
15
30

A-BOARD 2/2 TNP2AH050 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


J
I
H
G
F
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D
C
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A
1
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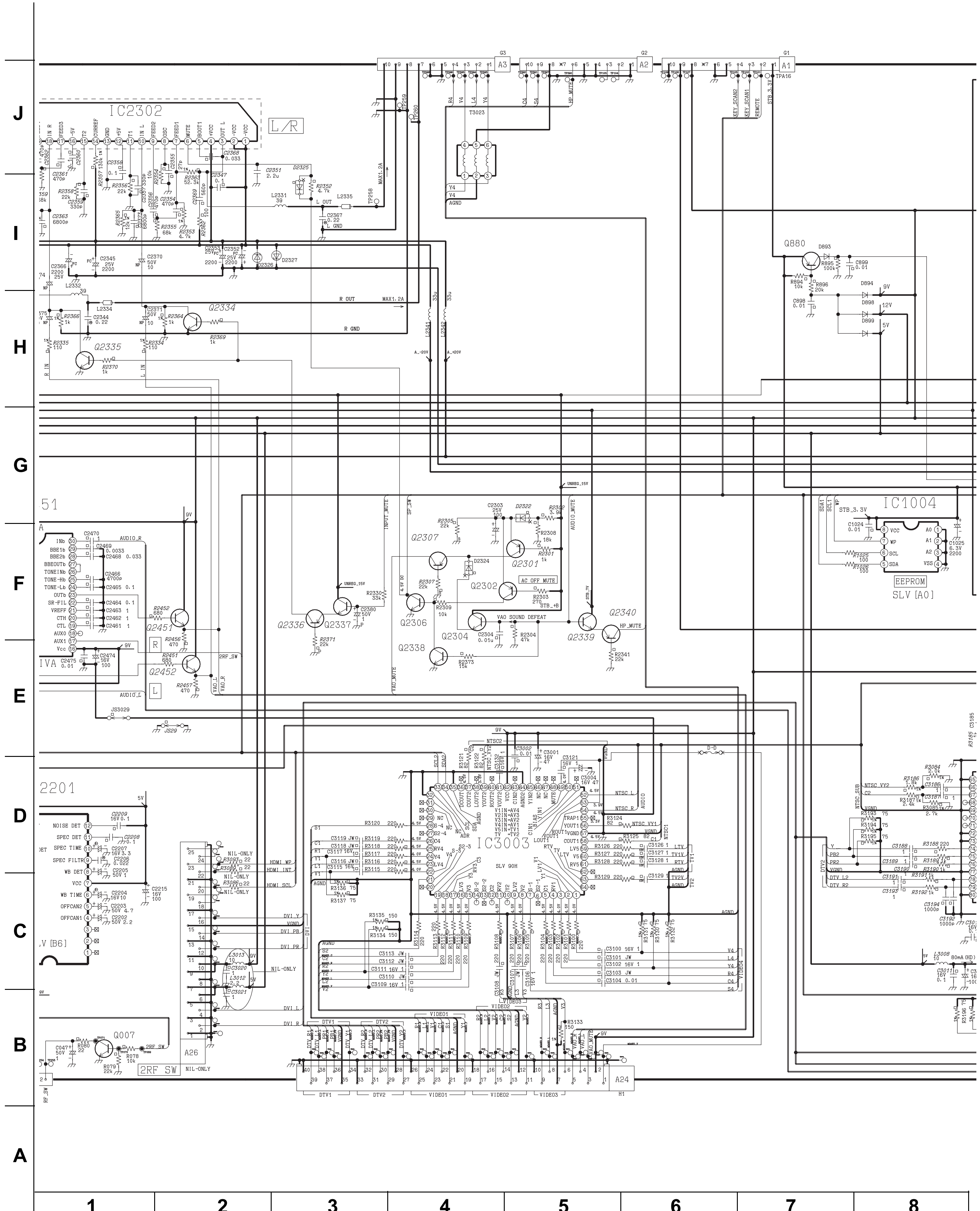
3
4
5
6
7
8
LANDING COIL
RT2
LANDING CORR.
IC4803
V.SENCE1
OUT1
-V.1
+V.1
GND
+V.2
-V.2
OUT2
V.SENCE2
VCC
T4801
LANDING
JS8
JS95
12V
IC2302
2nd TUNER
TNR002
1st TUNER
TNR001
AGC
TU
ADRS
SCL
SDA
NC
BTL
IF1
TP
GND
AFT
VIDEO
AUDIO
SCL2
SDA2
AFC2
AFC1
T3024
T3025
AGND
TV2V
TV1V
HOT
COLD
DEG2
DEG1
AC2
AC1
P1
AC120V
AC250V
RL803
INRUSH RELAY
D807
DEG RELAY
RL802
D803
TAP119M1R5
Q803
Q802
Q807
D804
D816
D815
TIMING SPEC AC RELAY
RL801
TPP12
STANDBY GND
STB_7V
BACK UP
STB12V
A_+20V
DEG_SW
AC_SW
DC12V
TPP10
T802
IC804
TPP9
STB_7V
L803
L802
L801
F801
6.3A
125V/250V
D809
1.6mmGAP
ACCORD
IC2451
NJW1147A
BBE VIVA
Q2451
Q2452
AUDIO_R
AUDIO_L
2RF_SW
JS3029
JS29
IC2201
SLV [B6]
MTS
SAP DET
MPX IN
PILOT DET
PLL
NOISE DET
SPEC DET
SPEC TIME
SPEC FILTR
WB DET
WB TIME
OFFCAN2
OFFCAN1
L OUT
R OUT
LTV
RTV
A13
TPA19
TPA20
Q2334
Q2335
Q007
A26
2RF SW
NIL-ONLY
A15
FACTORY
A12
REMOTE
SDA2
SCL2
SDA1 (EEPROM)
SCL1 (EEPROM)
FA2 (GND)
FA1
STB_7V
2RF
9V
RF_SW



IC2302
L/R
IC3003
SLV 90H
IC1004
EEPROM
SLV [A0]
Q2334
Q2335
Q2301
Q2302
Q2304
Q2306
Q2307
Q2336
Q2337
Q2338
Q2339
Q2340
Q2451
Q2452
Q880
Q007
T3023
A1
A2
A3
A24
A26
2RF SW
NIL-ONLY
R OUT
R GND
L OUT
L GND
MAX1.2A
UNREG_15V
INPUT_MUTE
SP_SW
AUDIO_MUTE
AC OFF MUTE
VAO SOUND DEFEAT
HP_MUTE
STB_+B
AUDIO_R
AUDIO_L
VAO_MUTE
KEY_SCAN2
KEY_SCAN1
REMOTE
STB_3.3V
HDMI_WP
HDMI_INT
HDMI_SCL
DVI_Y
VGND
DVI_PB
DVI_PR
DVI_L
DVI_R
DTV1
DTV2
VIDEO1
VIDEO2
VIDEO3
NTSC_L
NTSC_R
AUDIO
AGND
J
I
H
G
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D
C
B
A
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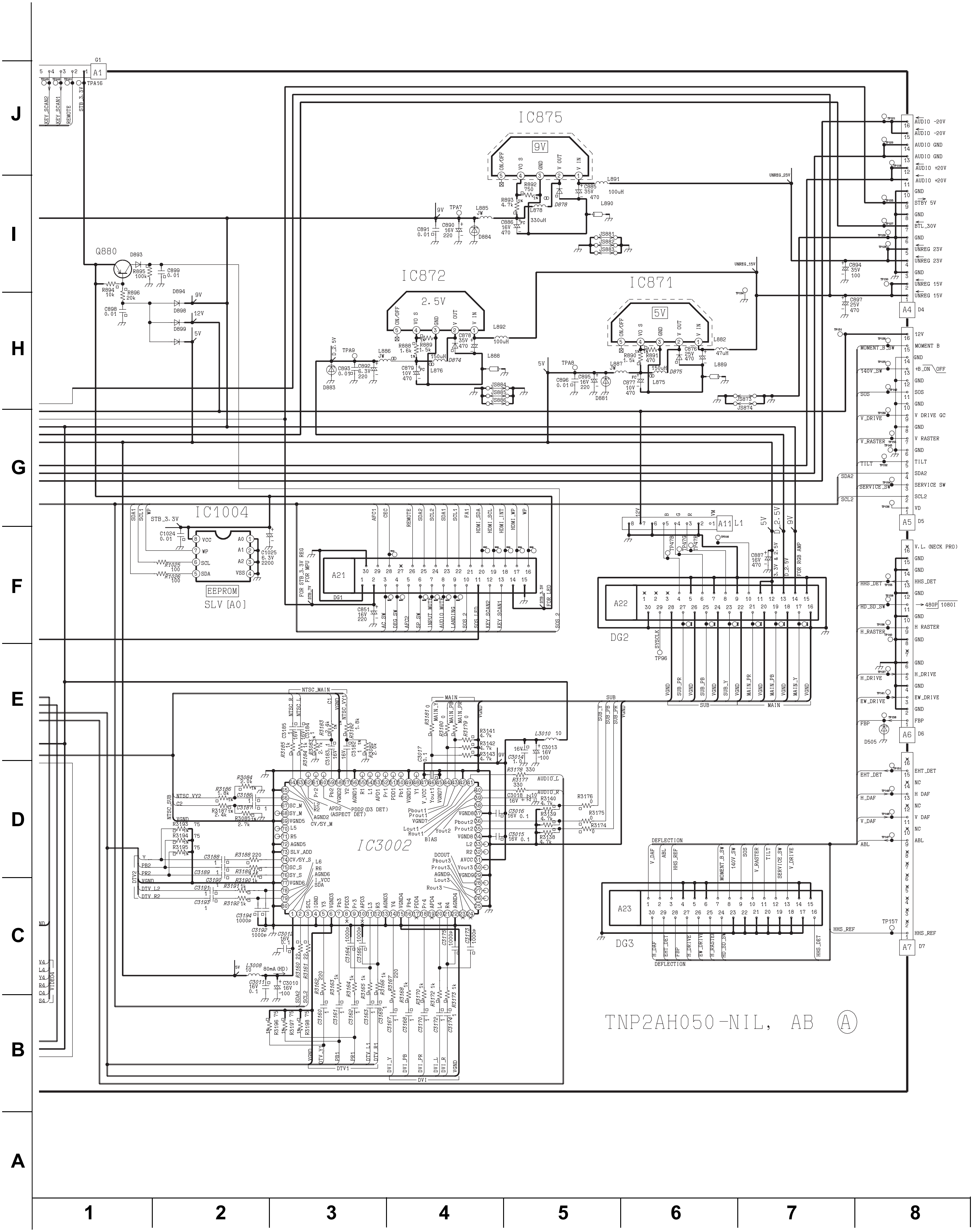
8

A-BOARD 2/3 TNP2AH050/AB CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


IC875
9V
IC872
2.5V
IC871
5V
IC1004
EEPROM
SLV [A0]
IC3002
Q880
A1
A4
A5
A6
A7
A11
A21
A22
A23
DG1
DG2
DG3
DEFLECTION
SUB
MAIN
DTV1
DVI
NTSC_MAIN
VIDEO4
AUDIO -20V
AUDIO GND
AUDIO +20V
STBY 5V
BTL_30V
UNREG 23V
UNREG 15V
FOR STB_3.3V REG
FOR MPU
FOR RGB AMP
TNP2AH050-NIL, AB Ⓐ
J
I
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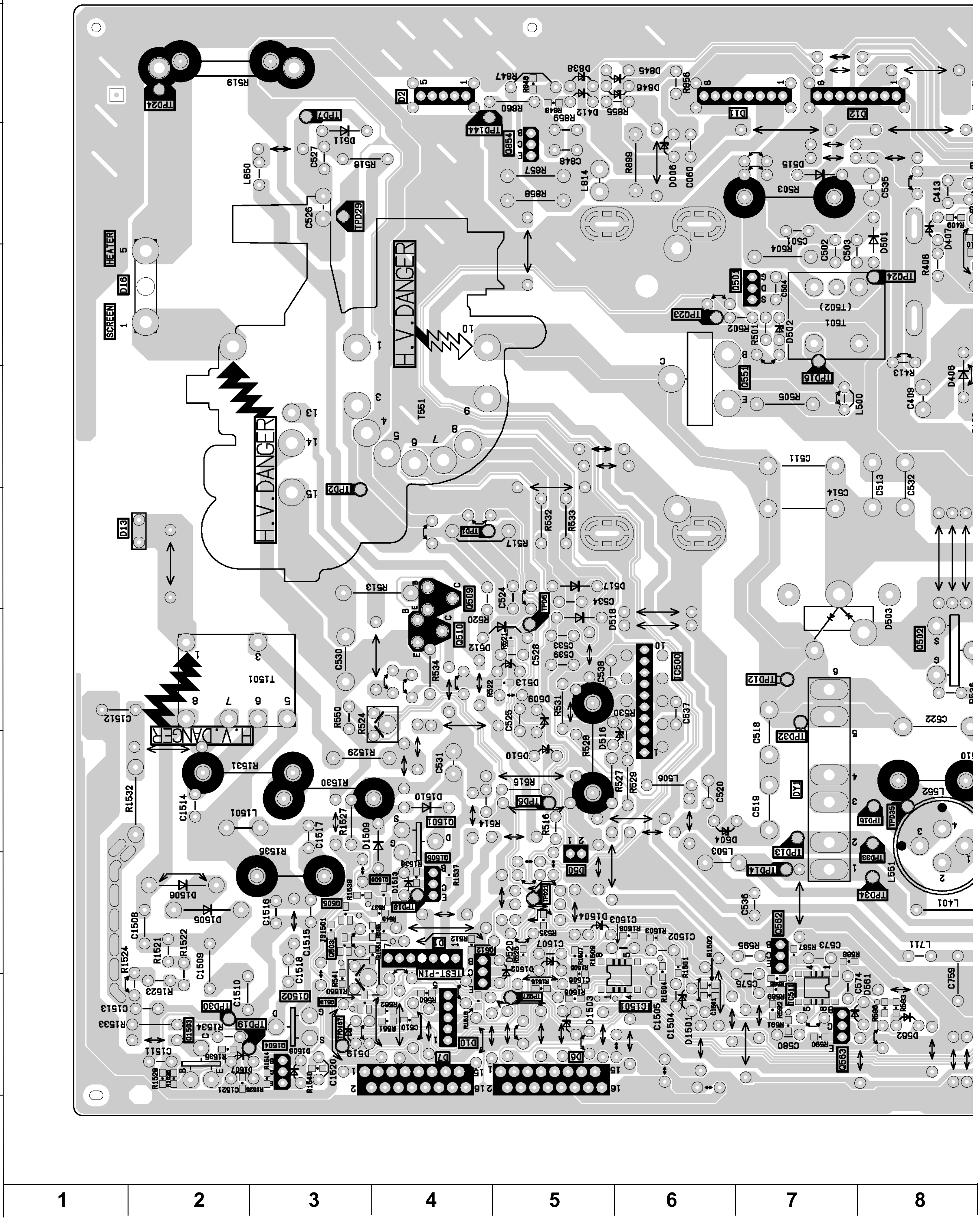
J
I
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A
1
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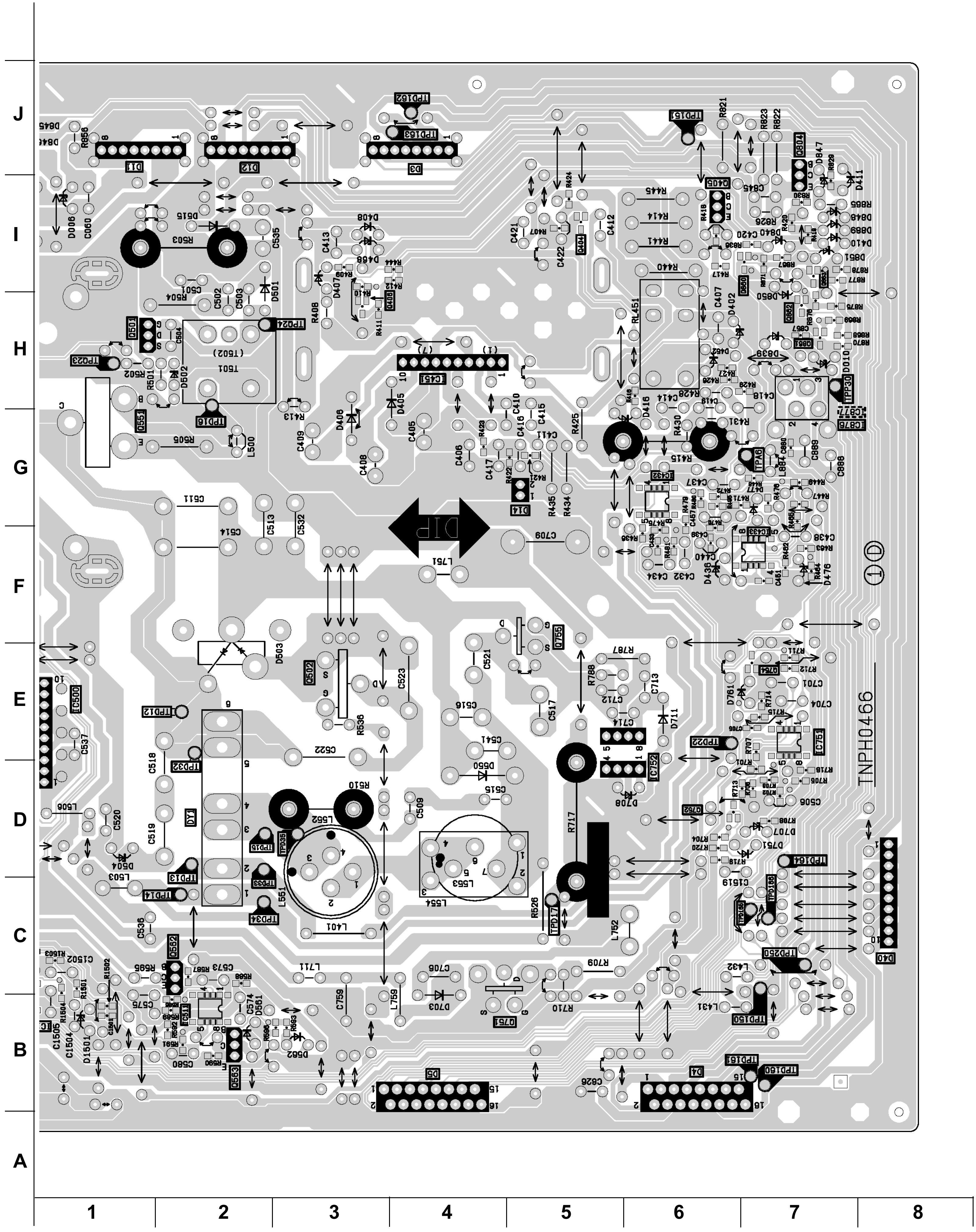
6
7
8
H.V. DANGER
H.V. DANGER
H.V. DANGER
H.V. DANGER
T551
T1501
DY1
IC500
IC1501
TEST-PIN
HEATER
SCREEN
D16
D13
D2
D11
D12
D7
D8
D1
D10
TPD24
TPD7
TPD144
TPD29
TPD2
TPD1
TPD6
TPD12
TPD32
TPD13
TPD14
TPD15
TPD33
TPD34
TPD35
TPD30
TPD19
R519
R503
R1531
R1530
R1536
R1532
L552
L551
L401
L711
Q501
Q502
Q509
Q510
Q551
Q562
Q563
Q864
Q1501
Q1502
Q1503
Q1504
T501
(T502)



J
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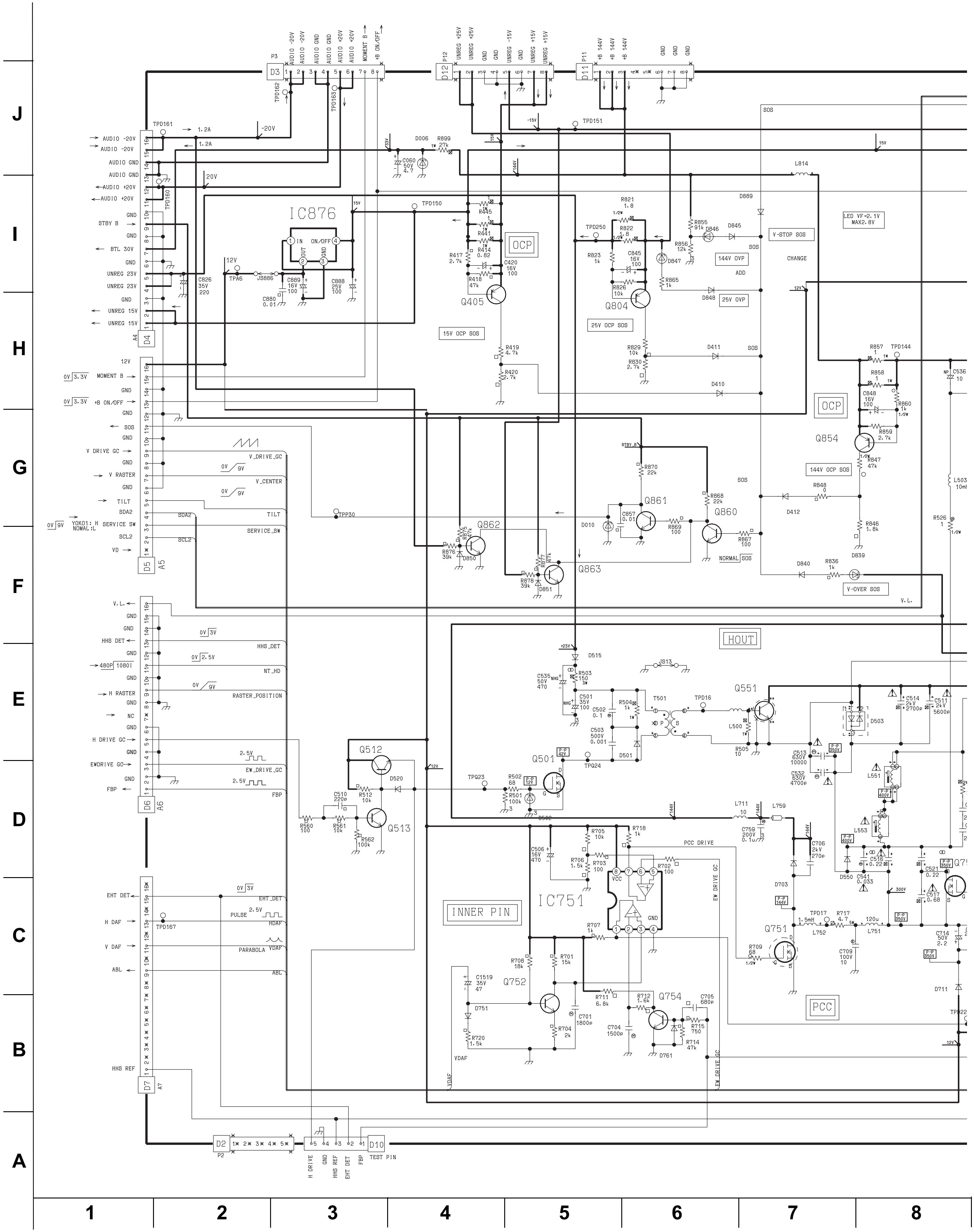
5
6
7
8
D11
D12
D3
TPD162
TPD163
TPD151
Q804
Q405
R503
D515
D501
C535
T501
(T502)
Q501
TPD24
TPD23
TPD16
Q551
R505
L500
IC451
RL451
R440
R445
R414
R441
Q404
Q406
D407
D408
D468
IC432
IC433
TPA6
TPA30
IC876
C709
L751
DIP
TNPH0466
1D
Q502
Q755
D503
C500
C537
TPD12
TPD32
DY1
C522
C516
C541
D550
R510
L552
L551
L553
L554
TPD35
TPD15
TPD13
TPD14
TPD33
TPD34
TPD17
R717
IC714
IC752
TPD22
IC751
Q764
TPD164
TPD166
TPD250
TPD150
D40
L432
L431
Q582
Q583
IC511
Q751
D703
L711
L759
D5
D4
TPD161
TPD160
C826
L401
L752
R526

D-BOARD 2/2 TNPH0466 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG



J
I
H
G
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B
A
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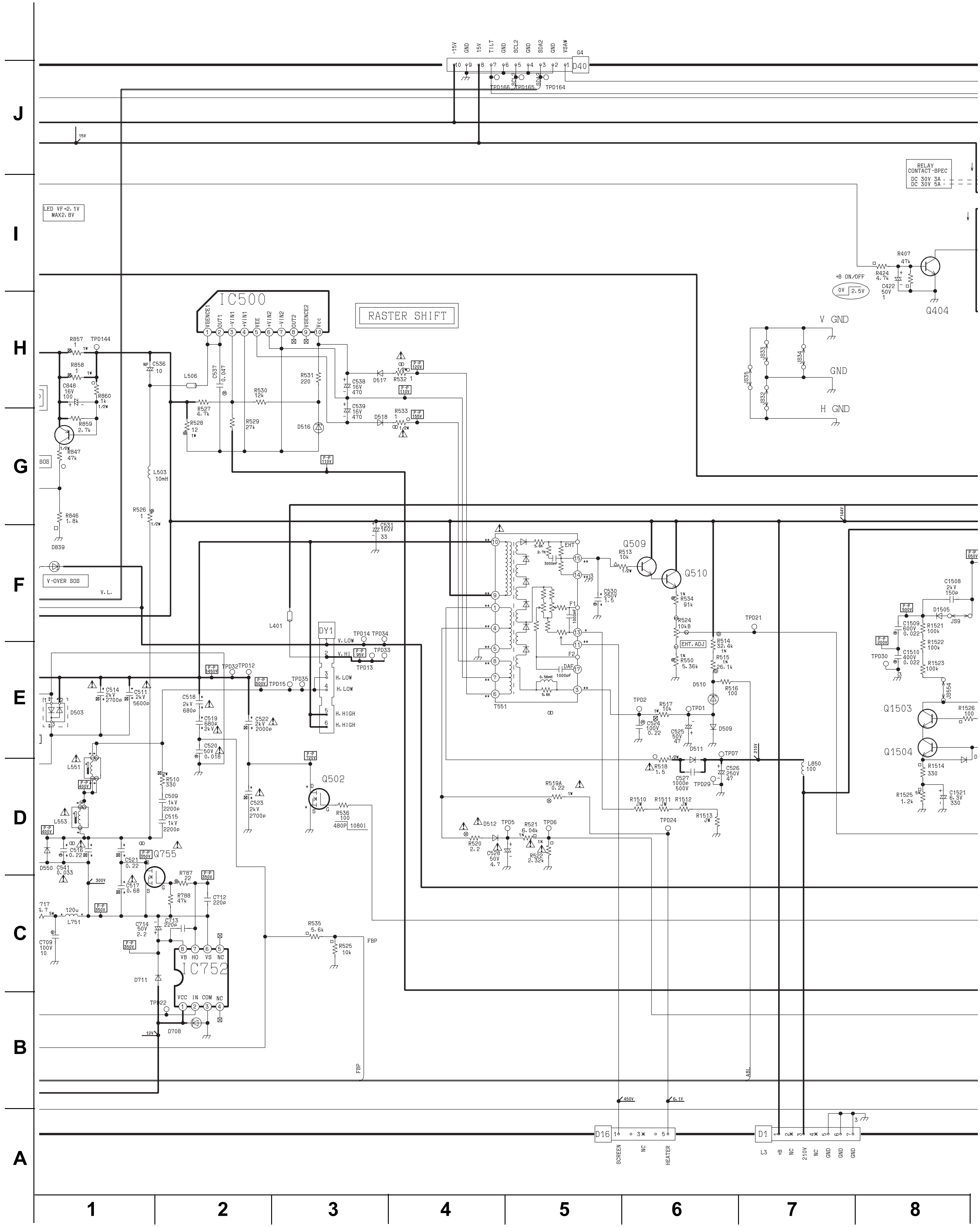
4
5
6
7
8
P3
D3
AUDIO -20V
AUDIO -20V
AUDIO GND
AUDIO GND
AUDIO +20V
AUDIO +20V
MOMENT B
+B ON/OFF
TPD162
TPD163
P12
D12
UNREG +25V
UNREG +25V
GND
GND
UNREG -15V
GND
UNREG +15V
UNREG +15V
P11
D11
+B 144V
+B 144V
+B 144V
GND
GND
GND
SOS
TPD161
1.2A
1.2A
-20V
20V
AUDIO -20V
AUDIO -20V
AUDIO GND
AUDIO GND
AUDIO +20V
AUDIO +20V
GND
STBY B
GND
BTL 30V
GND
UNREG 23V
UNREG 23V
GND
UNREG 15V
UNREG 15V
D4
A4
TPD160
IC876
IN
ON/OFF
OUT
GND
TPD150
D006
R899 27k
C060 50V 4.7
C826 35V 220
12V
TPA6
JS886
C889 16V 100
C880 0.01
C888 25V 100
R445
R441
R414 0.82
R417 2.7k
C420 16V 100
R418 47k
Q405
OCP
15V OCP SOS
R419 4.7k
R420 2.7k
TPD151
R821 1.8
R822 1.8
TPD250
R823 1k
C845 16V 100
R826 10k
Q804
25V OCP SOS
R829 10k
R830 2.7k
R855 91k
D846
D845
R856 12k
D847
R865 1k
D848
D889
L814
V-STOP SOS
144V OVP
ADD
CHANGE
25V OVP
D411
D410
SOS
LED VF=2.1V MAX2.8V
R857 1
TPD144
R858 1
C848 16V 100
R860 1k
R859 2.7k
Q854
R847 47k
144V OCP SOS
OCP
C536 10
L503
R526 1
R848 0
D412
R846 1.8k
D839
D840
R836 1k
V-OVER SOS
V.L.
12V
MOMENT B
GND
+B ON/OFF
GND
SOS
GND
V DRIVE GC
GND
V RASTER
GND
TILT
SDA2
YOKO1: H SERVICE SW NOMAL:L
SCL2
VD
D5
A5
V_DRIVE_GC
V_CENTER
TILT
SERVICE_SW
SDA2
SCL2
TPP30
STBY_B
R870 22k
Q861
C857 0.01
D010
R869 100
R868 22k
Q860
R867 100
NORMAL SOS
Q862
R875 47k
R876 39k
D850
Q863
R877 47k
R878 39k
D851
V.L.
GND
GND
HHS DET
GND
480P 1080I
GND
H RASTER
GND
NC
GND
H DRIVE GC
GND
EWDRIVE GC
GND
FBP
D6
A6
HHS_DET
NT_HD
RASTER_POSITION
EW_DRIVE_GC
FBP
HOUT
+23V
D515
C535 50V 470
R503 150 3W
JS13
C501 35V 100
C502 0.1
R504 1k
T501
TPD16
Q551
L500
C503 500V 0.001
D501
R505 10
Q501
TPQ24
TPQ23
R502 68
R501 100k
D502
Q512
D520
C510 220p
R512 10k
R561 10k
R560 100
Q513
R562 100k
C514 2kV 2700p
C511 2kV 5600p
D503
C513 630V 10000
C532 630V 4700p
L551
L553
L711 10
L759
C759 200V 0.1u
C706 2kV 270p
D703
D550
C541 0.033
C516 0.22
C521 0.22
C517 0.68
R705 10k
R718 1k
PCC DRIVE
C506 16V 470
R706 1.5k
R703 100
R702 100
IC751
VCC
GND
INNER PIN
EW DRIVE GC
R707 1k
TPD17
R717 4.7
1.5mH
L752
120u
L751
C714 50V 2.2
C709 100V 10
Q751
R709 68
R708 18k
R701 15k
Q752
C1519 35V 47
D751
R720 1.5k
R704 2k
C701 1800p
R711 6.8k
R712 1.6k
Q754
C705 680p
C704 1500p
R715 750
R714 47k
D761
PCC
D711
VDAF
EHT DET
H DAF
V DAF
ABL
HHS REF
D7
A7
TPD167
EHT_DET
PULSE
HDAF
PARABOLA
VDAF
ABL
D2
P2
D10
TEST PIN
H DRIVE
GND
HHS REF
EHT DET
FBP

D-BOARD 1/4 TNPH0466AE CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


J
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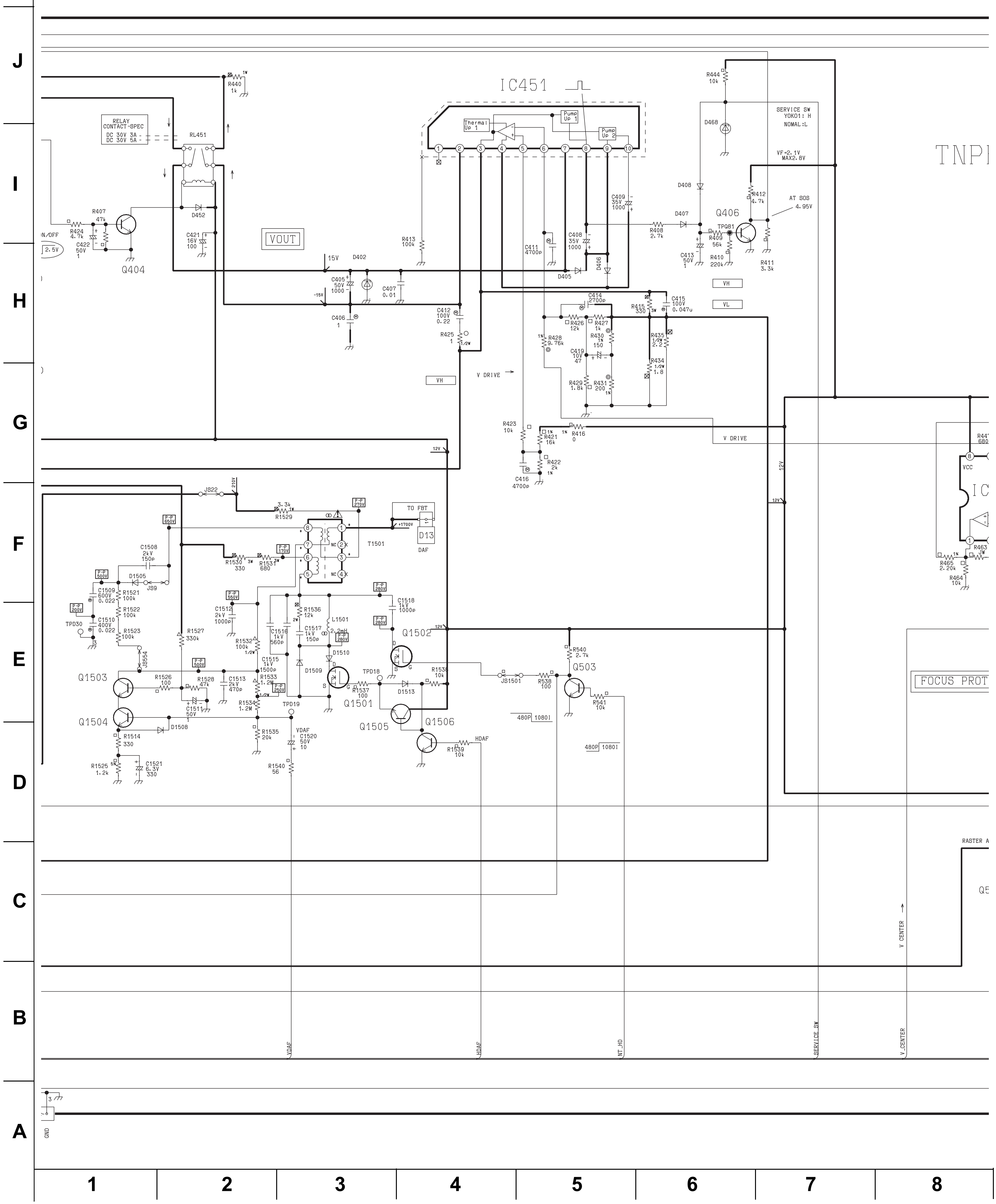
7
8
-15V
GND
15V
TILT
GND
SCL2
GND
SDA2
GND
VSAW
G4
D40
TPD166
TPD165
TPD164
15V
RELAY CONTACT-SPEC
DC 30V 3A
DC 30V 5A
LED VF=2.1V MAX2.8V
+B ON/OFF
0V 2.5V
R407 47k
R424 4.7k
C422 50V 1
Q404
IC500
VSENCE1
OUT1
-VIN1
+VIN1
VEE
+VIN2
-VIN2
OUT2
VSENCE2
Vcc
RASTER SHIFT
V GND
GND
H GND
JS33
JS34
JS35
JS32
R857 1
TPD144
R858 1
C848 16V 100
R860 1k 1/2W
R859 2.7k
R847 47k
SOS
R846 1.8k
D839
V-OVER SOS
V.L.
C536 10
L506
C537 0.047
R527 4.7k
R528 12 1W
R530 12k
R529 27k
R531 220
D516
C538 16V 470
C539 16V 470
D517
D518
R532 1
R533 1
P-P 120V
P-P 110V
P-P 155V
P-P 110V
L503 10mH
R526 1
C531 160V 33
L401
DY1
V.LOW
V.HI
H.LOW
H.LOW
H.HIGH
H.HIGH
TPD14
TPD34
TPD33
TPD13
P-P 95V
TPD32
TPD12
P-P 1450V
P-P 500V
TPD15
TPD35
T551
EHT
F1
F2
DAF
5.6k
2.7k
3000pF
1000pF
0.56mH
Q509
Q510
R513 10k
C530 250V 1.5
R534 91k
R524 10kB
EHT.ADJ
R550 5.36k
R514 32.4k
R515 26.1k
R516 100
D510
D509
TPD21
TPD2
R517 10k
TPD1
C524 100V 0.22
C525 50V 47
D511
TPD7
R518 1.5
C527 1000p 500V
TPD29
C526 250V 47
L850 100
210V
144V
R519A 0.22
R1510 JW
R1511 JW
R1512 JW
R1513 JW
TPD24
D512
R520 2.2
TPD5
C528 50V 4.7
R521 6.04k
TPD6
R522 2.32k
C514 2kV 2700p
C511 2kV 5600p
D503
C518 2kV 680p
C519 680p 2kV
C520 50V 0.018
C522 2kV 2000p
C523 2kV 2700p
P-P 720V
Q502
R536 100
480P
10801
L551
L553
P-P 400V
R510 330
C509 1kV 2200p
C515 1kV 2200p
D550
C541 0.033
C516 0.22
C521 0.22
Q755
P-P 350V
C517 0.68
300V
R787 22
R788 47k
C712 220p
L751 120u
C709 100V 10
C714 50V 2.2
C713 220p
IC752
VB HO VS NC
VCC IN COM NC
D711
TPD22
D708
12V
R535 5.6k
R525 10k
FBP
P-P 650V
C1508 2kV 150p
D1505
JS9
C1509 600V 0.022
R1521 100k
P-P 500V
P-P 200V
TPD30
C1510 400V 0.022
R1522 100k
R1523 100k
JS554
Q1503
R1526 100
Q1504
R1514 330
R1525 1.2k
C1521 6.3V 330
ABL
450V
6.1V
D16
SCREEN
NC
HEATER
D1
L3
+B
NC
210V
NC
GND
GND
GND

D-BOARD 2/4 TNPH0466AE CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG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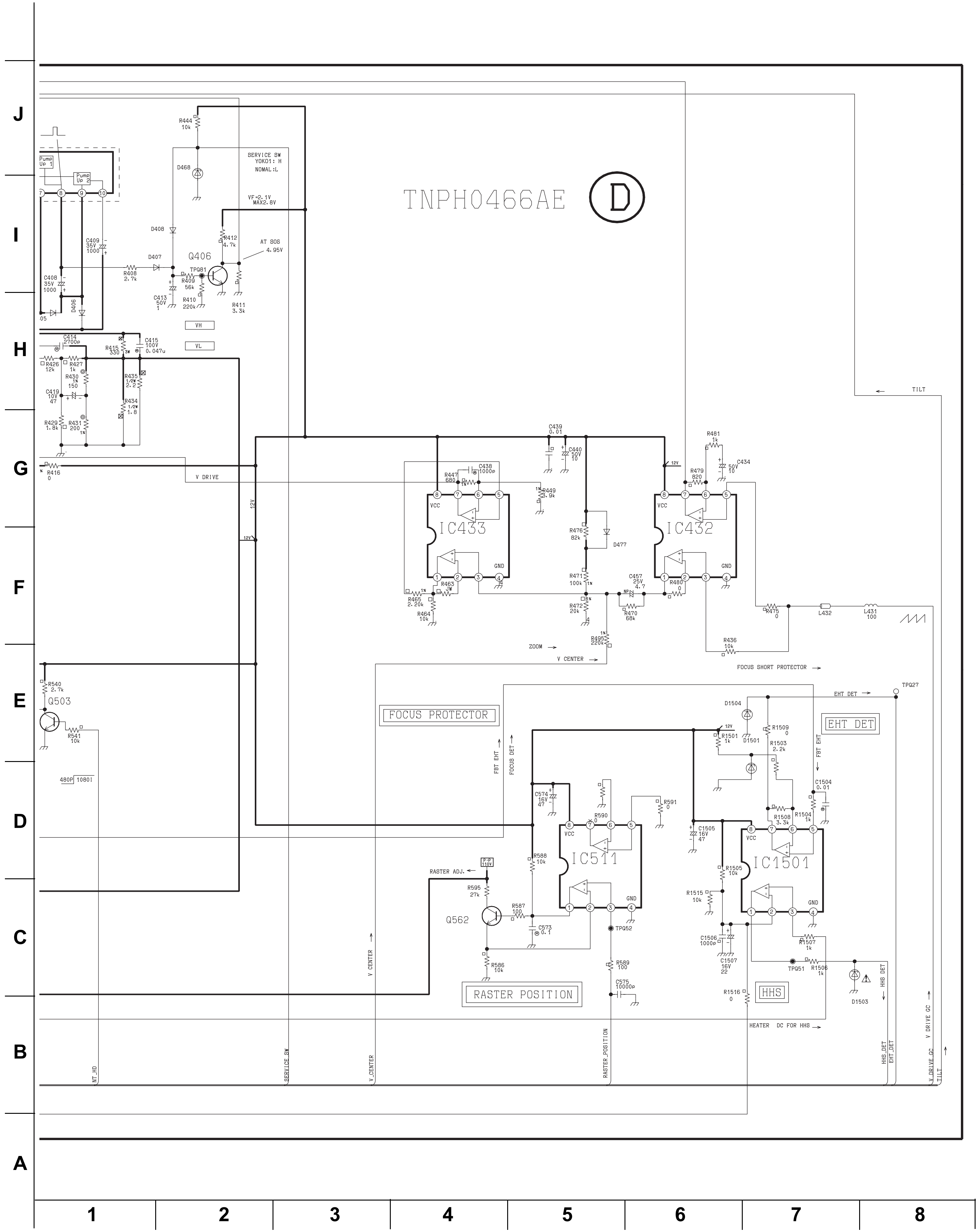
IC451
Thermal Up 1
Pump Up 1
Pump Up 2
R440 1k 1W
RELAY CONTACT-SPEC
DC 30V 3A
DC 30V 5A
RL451
D452
R407 47k
R424 4.7k
C422 50V 1
Q404
N/OFF
2.5V
C421 16V 100
VOUT
15V
D402
C405 50V 1000
C407 0.01
-15V
C406 1
C412 100V 0.22
R425 1 1/2W
R413 100k
C411 4700p
C409 35V 1000
C408 35V 1000
D405
D406
R408 2.7k
D407
D408
R444 10k
D468
SERVICE SW YOKO1: H NOMAL:L
VF=2.1V MAX2.8V
R412 4.7k
AT SOS 4.95V
Q406
TPQ81
R409 56k
C413 50V 1
R410 220k
R411 3.3k
TNP
VH
VL
C414 2700p
R415 330 3W
C415 100V 0.047u
R426 12k
R427 1k
R428 9.76k
R430 150
C419 10V 47
R435 1/2W 2.2
R434 1/2W 1.8
R429 1.8k
R431 200
V DRIVE
VH
R423 10k
R421 16k
R416 0
R422 2k
C416 4700p
V DRIVE
12V
12V
12V
R441 680
VCC
IC
R463 JW
R465 2.20k
R464 10k
JS22
210V
3.3k
R1529 1W
P-P 270V
TO FBT
+1700V
D13
DAF
T1501
NC
P-P 650V
C1508 2kV 150p
R1530 330 3W
R1531 680 3W
P-P 170V
P-P 500V
D1505
JS9
C1509 600V 0.022
R1521 100k
R1522 100k
P-P 200V
C1510 400V 0.022
TPD30
R1523 100k
R1527 330k
P-P 550V
C1512 2kV 1000p
R1536 12k 2W
L1501 2.2mH
C1516 1kV 560p
C1517 1kV 150p
P-P 280V
P-P 280V
C1518 1kV 1000p
P-P 280V
Q1502
12V
JS554
R1532 100k
D1510
D1509
Q1503
R1526 100
P-P 500V
R1528 47k
C1513 2kV 470p
C1515 1kV 1500p
R1533 1.2M 1/2W
P-P 250V
TPD18
R1538 10k
JS1501
R538 100
R540 2.7k
Q503
R541 10k
C1511 50V 1
R1534 1.2M
R1537 100
D1513
Q1501
TPD19
Q1504
D1508
R1514 330
R1535 20k
C1520 50V 10
VDAF
Q1505
Q1506
HDAF
R1539 10k
480P 1080I
480P 1080I
R1525 1.2k
C1521 6.3V 330
R1540 56
FOCUS PROT
RASTER A
Q5
V CENTER
VDAF
HDAF
NT_HD
SERVICE_SW
V_CENTER
GND


TNPH0466AE
D
SERVICE SW
YOKO1: H
NOMAL:L
VF=2.1V
MAX2.8V
AT SOS
4.95V
Q406
TPQ81
Pump Up 1
Pump Up 2
R444 10k
D468
D408
D407
R408 2.7k
R409 56k
R410 220k
R411 3.3k
R412 4.7k
C408 35V 1000
C409 35V 1000
C413 50V 1
D406
C414 2700P
C415 100V 0.047u
R415 330 3W
R426 12k
R427 1k
R430 1% 150
R435 1/2W 2.2
R434 1/2W 1.8
C419 10V 47
R429 1.8k
R431 200
R416 0
VH
VL
V DRIVE
12V
TILT
C439 0.01
C440 50V 10
R481 1k
C434 50V 10
R479 820
R447 680
C438 1000P
R449 3.9k
IC433
IC432
VCC
GND
R476 82k
D477
R471 100k
R472 20k
C457 25V 4.7
R470 68k
R480 0
R463 JW
R465 2.20k
R464 10k
R495 220k
R475 0
L432
L431 100
R436 10k
ZOOM
V CENTER
FOCUS SHORT PROTECTOR
R540 2.7k
Q503
R541 10k
480P 1080I
FOCUS PROTECTOR
FBT EHT
FOCUS DET
TPQ27
EHT DET
D1504
R1509 0
R1501 1k
D1501
R1503 2.2k
C1504 0.01
R1508 3.3k
R1504 1k
C574 16V 47
R590 0
R591 0
IC511
IC1501
C1505 16V 47
R1505 10k
R1515 10k
R588 10k
RASTER ADJ.
P-P 110V
R595 27k
Q562
R587 100
C573 0.1
TPQ52
R586 10k
R589 100
C575 10000P
RASTER POSITION
C1506 1000P
C1507 16V 22
R1507 1k
TPQ51
R1506 1k
D1503
R1516 0
HHS
HHS DET
HEATER DC FOR HHS
V DRIVE GC
NT_HD
SERVICE_SW
V_CENTER
RASTER_POSITION
HHS_DET
EHT_DET
V_DRIVE_GC
TILT
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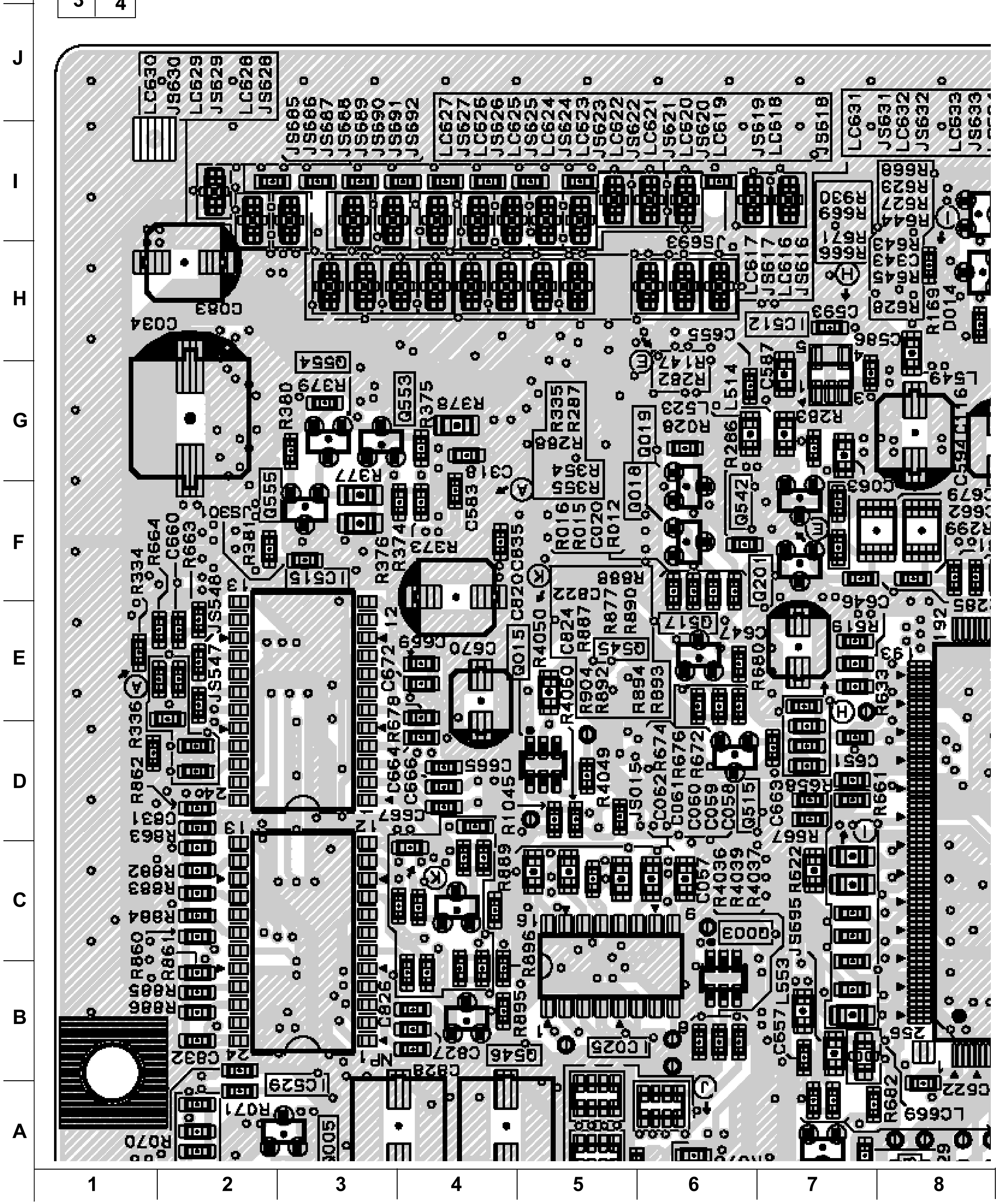
VIEW


J
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LC630
JS630
LC629
JS629
LC628
JS628
JS685
JS686
JS687
JS688
JS689
JS690
JS691
JS692
LC627
JS627
LC626
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LC625
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LC623
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JS631
LC632
JS632
LC633
JS633
C083
C034
JS693
LC617
JS617
LC616
JS616
IC512
Q554
R379
R380
Q553
R375
R378
R377
Q555
C318
C583
R374
R373
R376
IC515
R381
JS301
R664
C660
R663
R334
JS548
JS547
R336
R862
C831
R863
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R883
R884
R860
R861
R885
R886
C832
IC529
R071
R070
Q005
C820
C835
C669
C670
C672
R678
C664
C666
C665
C667
R1045
C826
C827
C828
Q546
IC025
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R895
R896
Q015
R4050
R4060
C824
C822
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R877
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R888
R016
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C020
R012
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C587
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Q545
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R894
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C060
C059
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C057
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R4039
R4037
Q003
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C657
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LC669
C622
C651
R633
C593
C586
L549
D014
R169
R628
R645
C343
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C594
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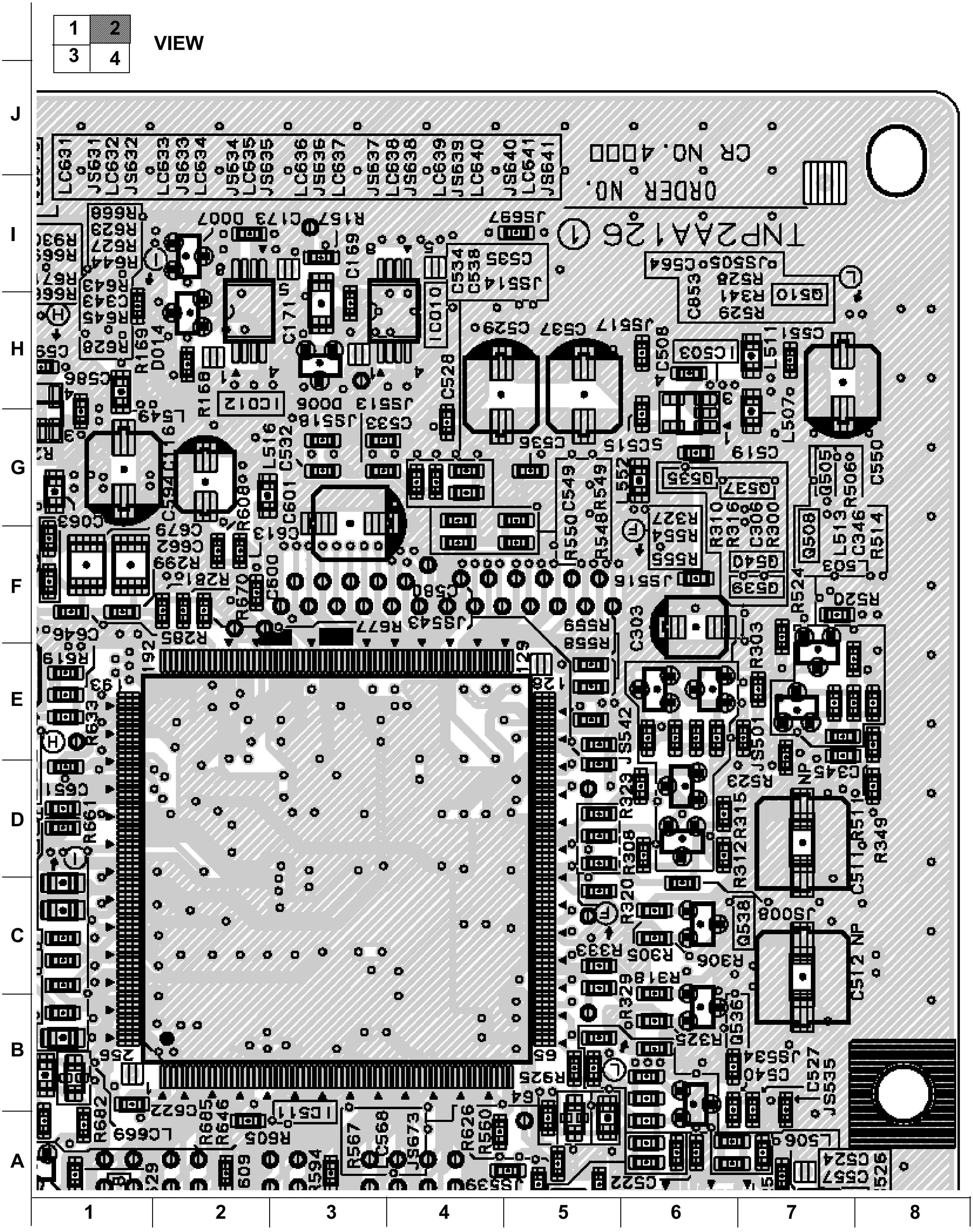
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VIEW
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TNP2AA126
ORDER NO.
CR NO.4000
IC012
IC010
IC503
IC511
LC631
JS631
LC632
JS632
LC633
JS633
LC634
JS634
LC635
JS635
LC636
JS636
LC637
JS637
LC638
JS638
LC639
JS639
LC640
JS640
LC641
JS641
D007
D006
D014
C529
C537
C549
C550
C511
C512
C527
JS535
Q535
Q537
Q538
Q536
Q540
Q539
Q505
Q506
Q508
Q510
L549
L506
L507
L511
R925
192
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128
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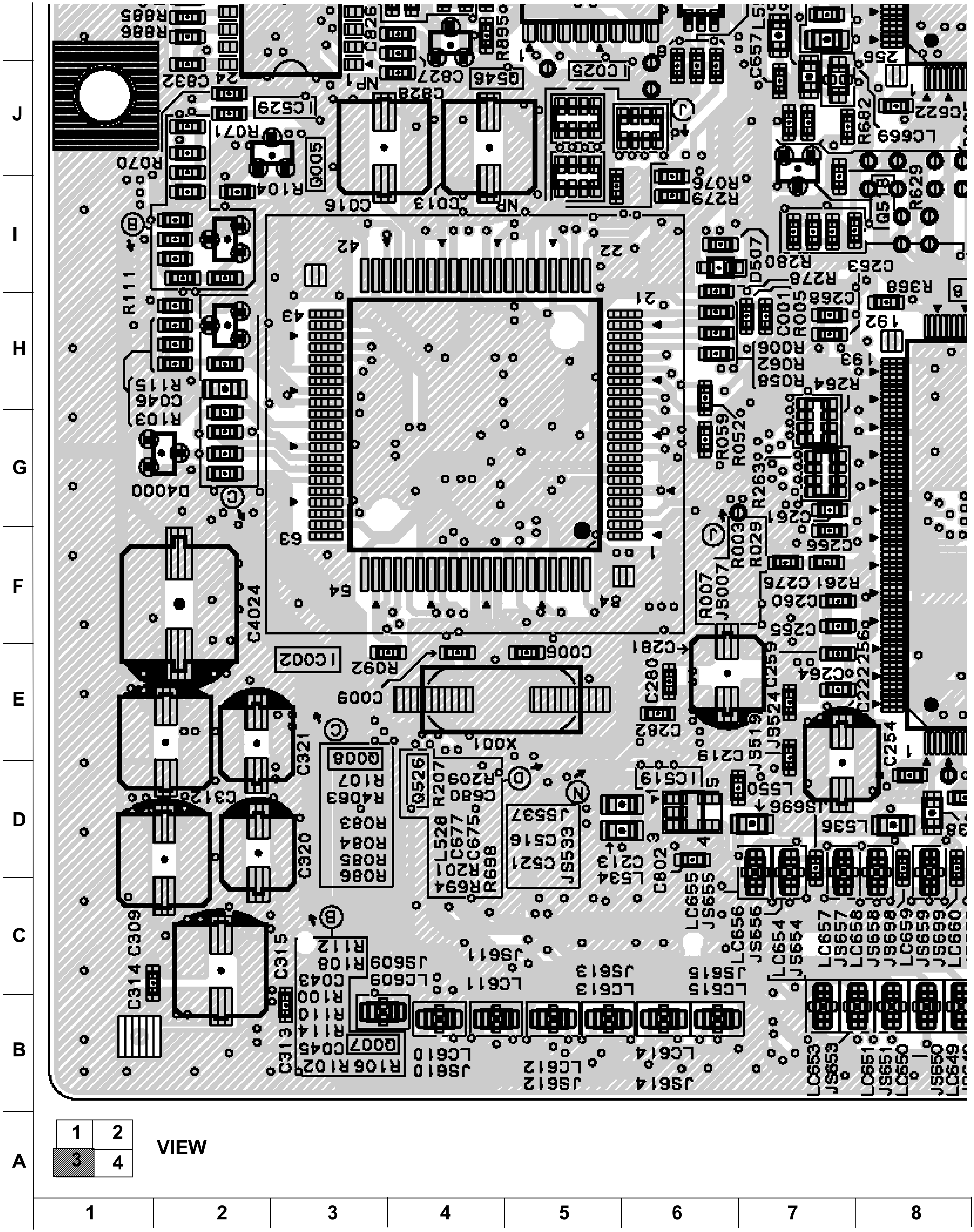
DG-BOARD BOTTOM-VIEW 2/4 TNP2AA126 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG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R886
C832
R070
R071
R104
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C529
C826
C827
C828
NP1
Q546
R895
C016
C013
NR
IC025
R076
R279
C557
R682
LC669
C622
R629
Q51
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R115
C046
R103
D4000
C4024
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1
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R280
R278
C263
R368
C268
C001
R005
R006
R062
R058
R264
R059
R052
R263
C261
R003
R029
C266
R007
JS007
C276
R261
C260
C265
C281
C259
C264
C222
C254
C280
C282
C219
JS519
JS524
IC002
R092
C006
C009
X001
C321
C312
C320
C309
C314
C315
C313
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R084
R085
R086
Q526
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R209
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C677
C675
R201
R698
R694
JS537
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C521
JS533
C213
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C802
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JS696
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LC654
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LC657
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LC658
JS658
JS698
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JS699
LC660
R112
R108
C043
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R110
R114
C045
R102
R106
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JS614
LC653
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LC651
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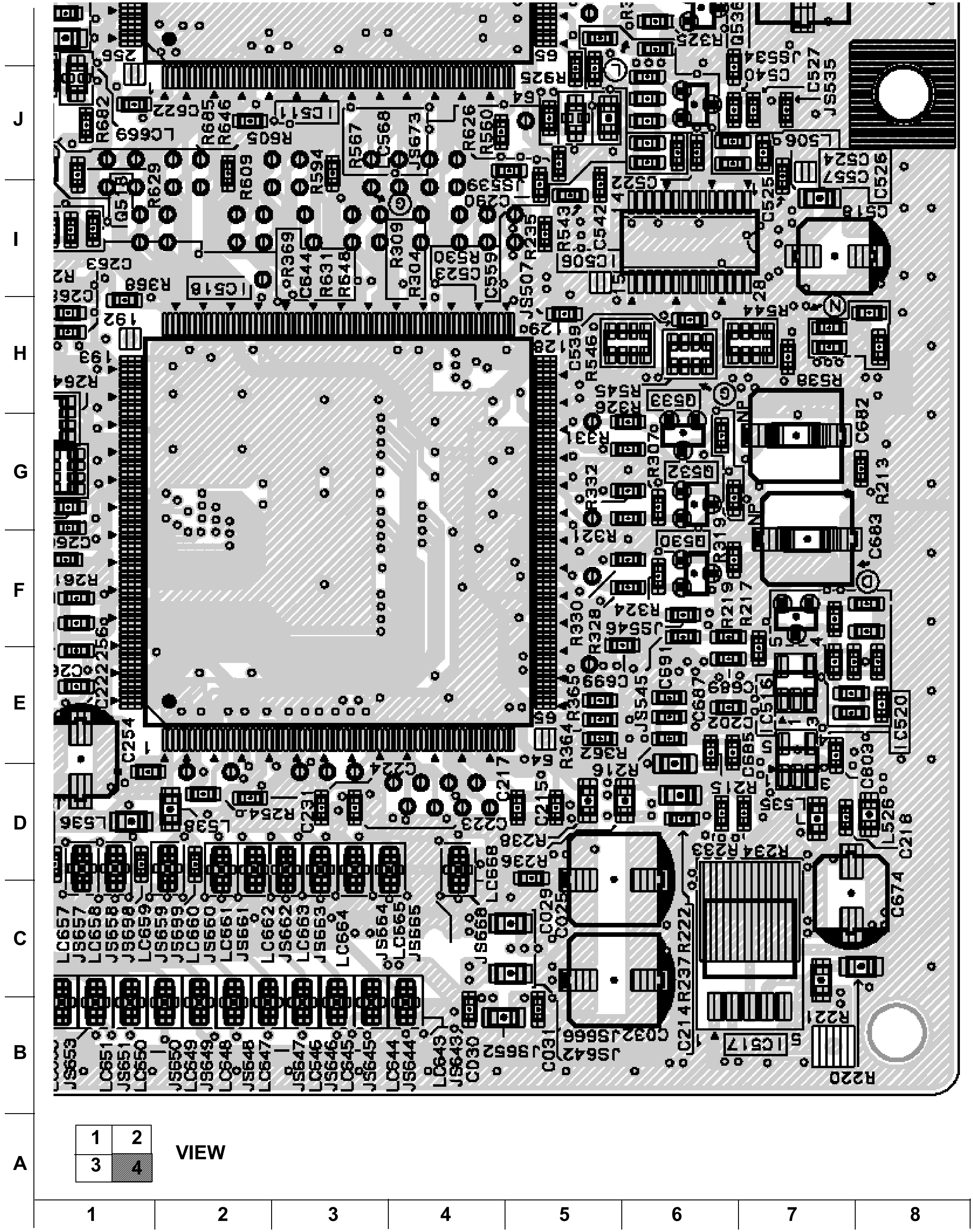
LC649

DG-BOARD BOTTOM-VIEW 3/4 TNP2AA126 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG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IC511
IC506
IC517
IC520
IC516
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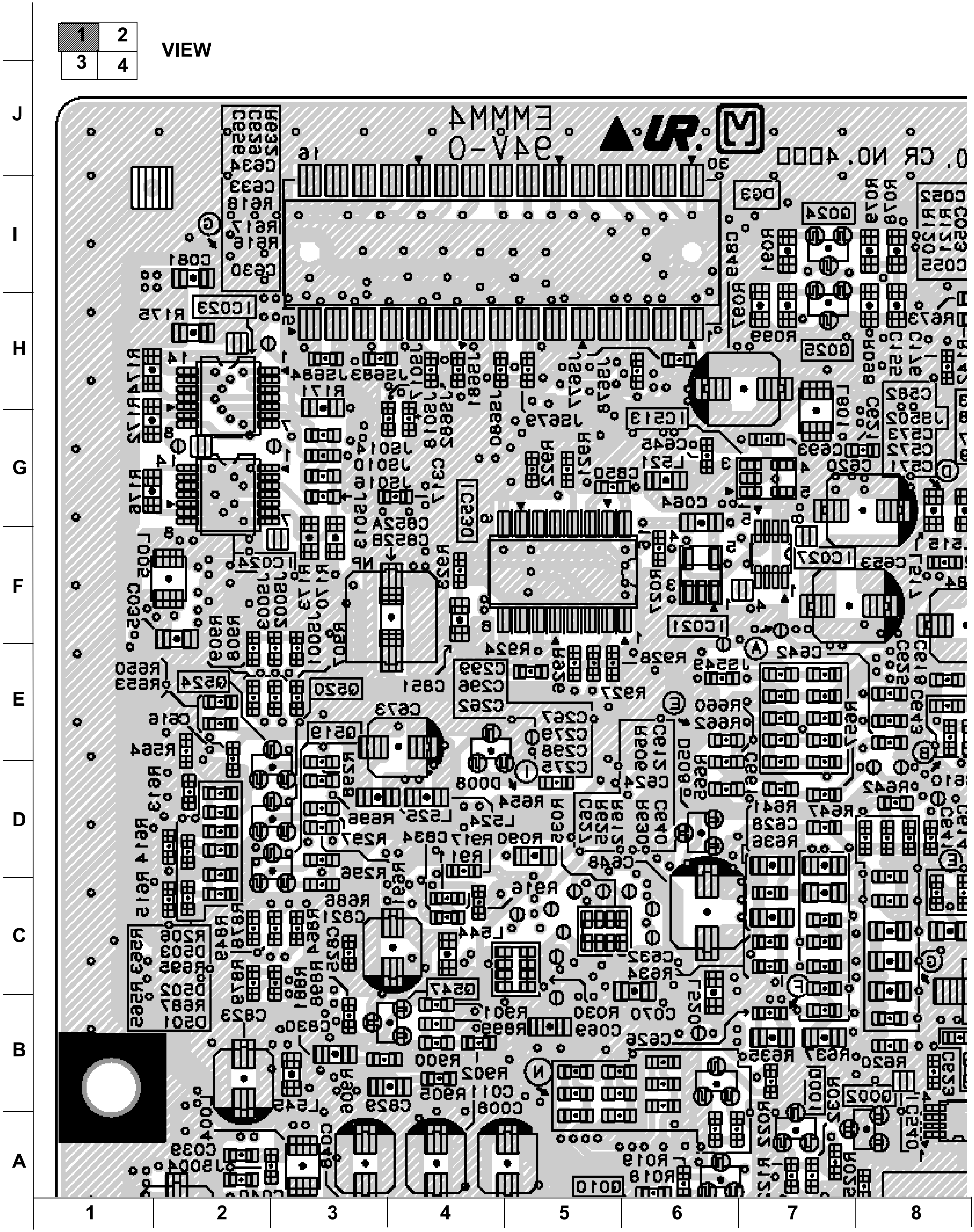
DG-BOARD BOTTOM-VIEW 4/4 TNP2AA126 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG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VIEW
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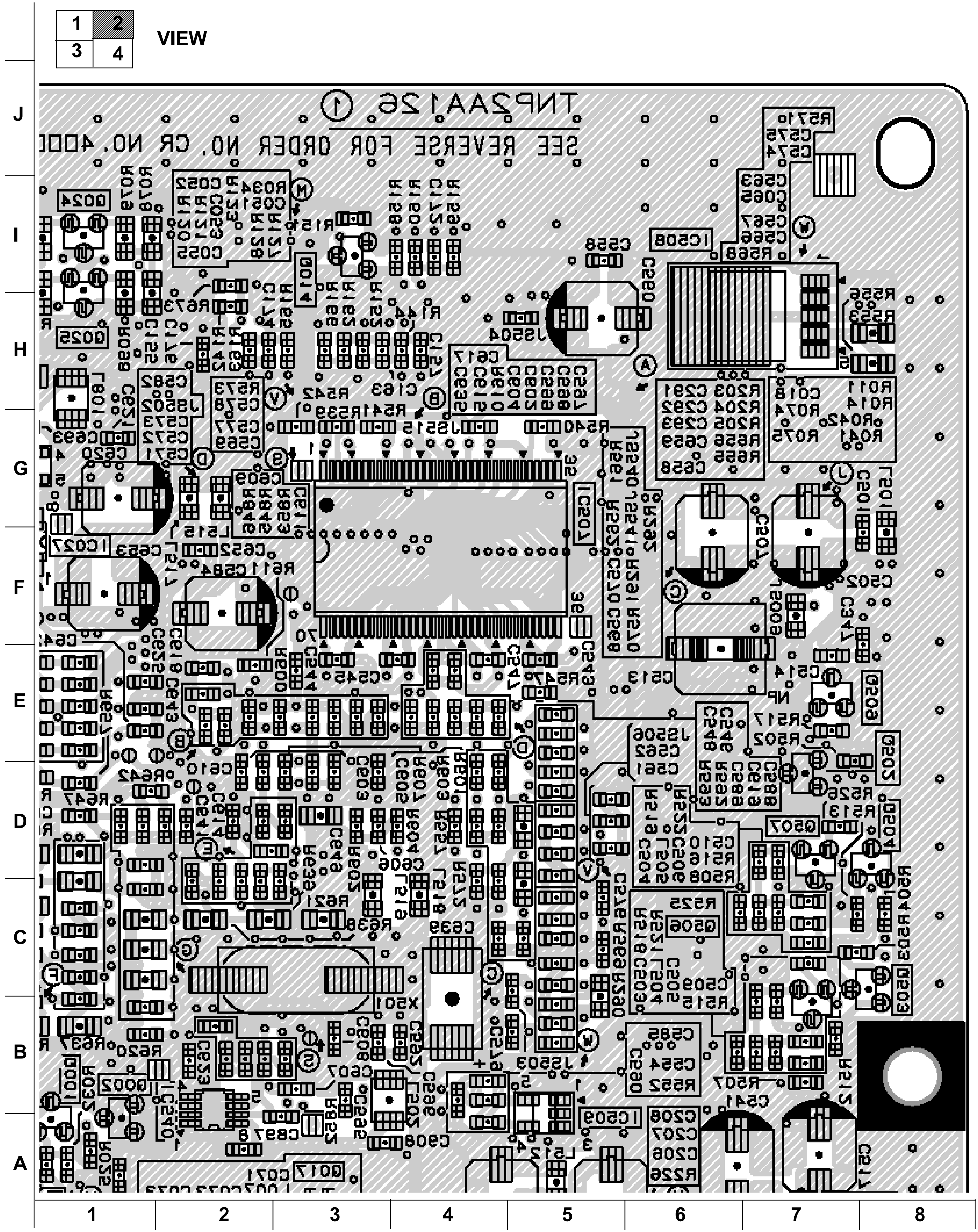
DG-BOARD TOP-VIEW 1/4 TNP2AA126 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG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VIEW
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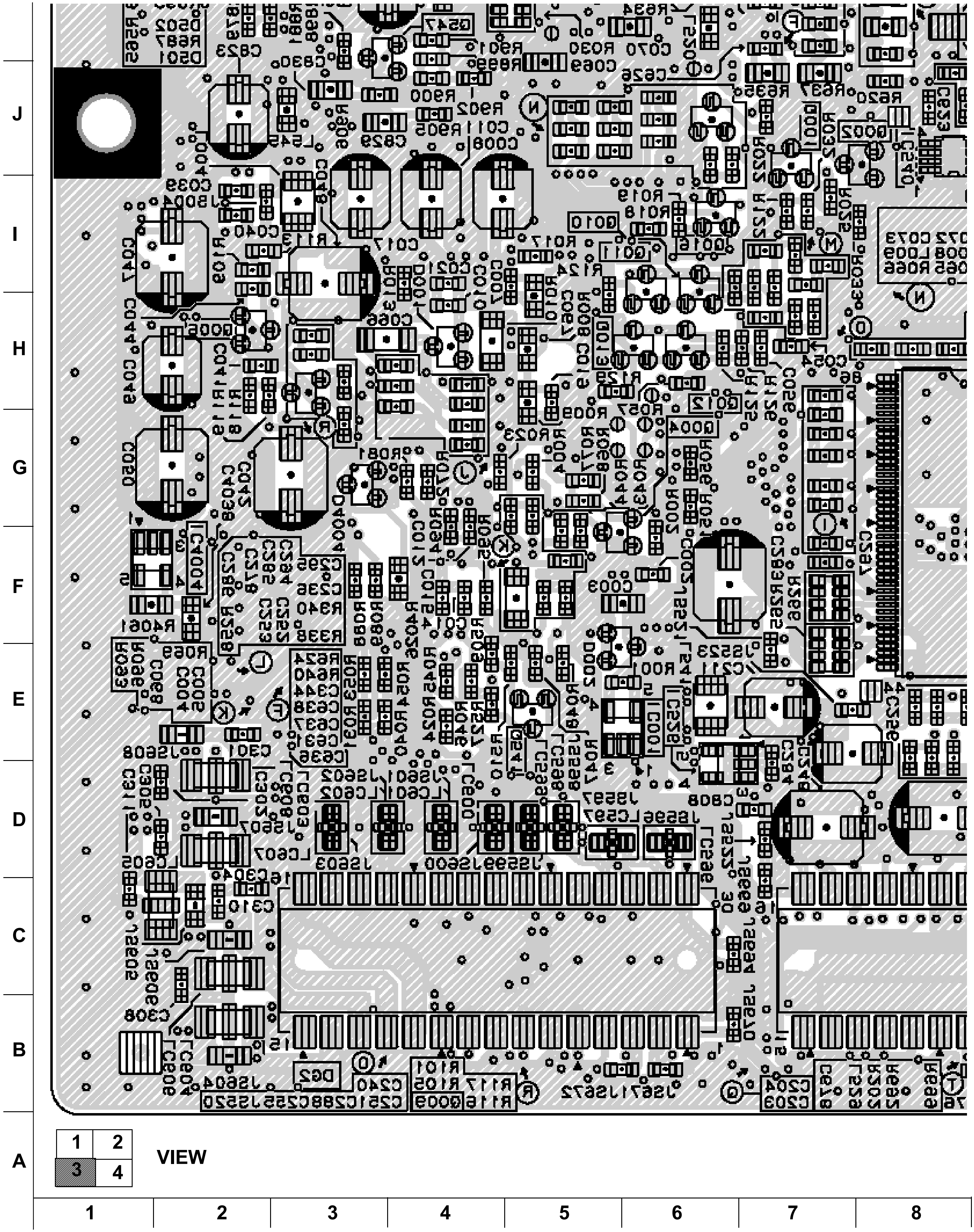
DG-BOARD TOP-VIEW 2/4 TNP2AA126 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


J
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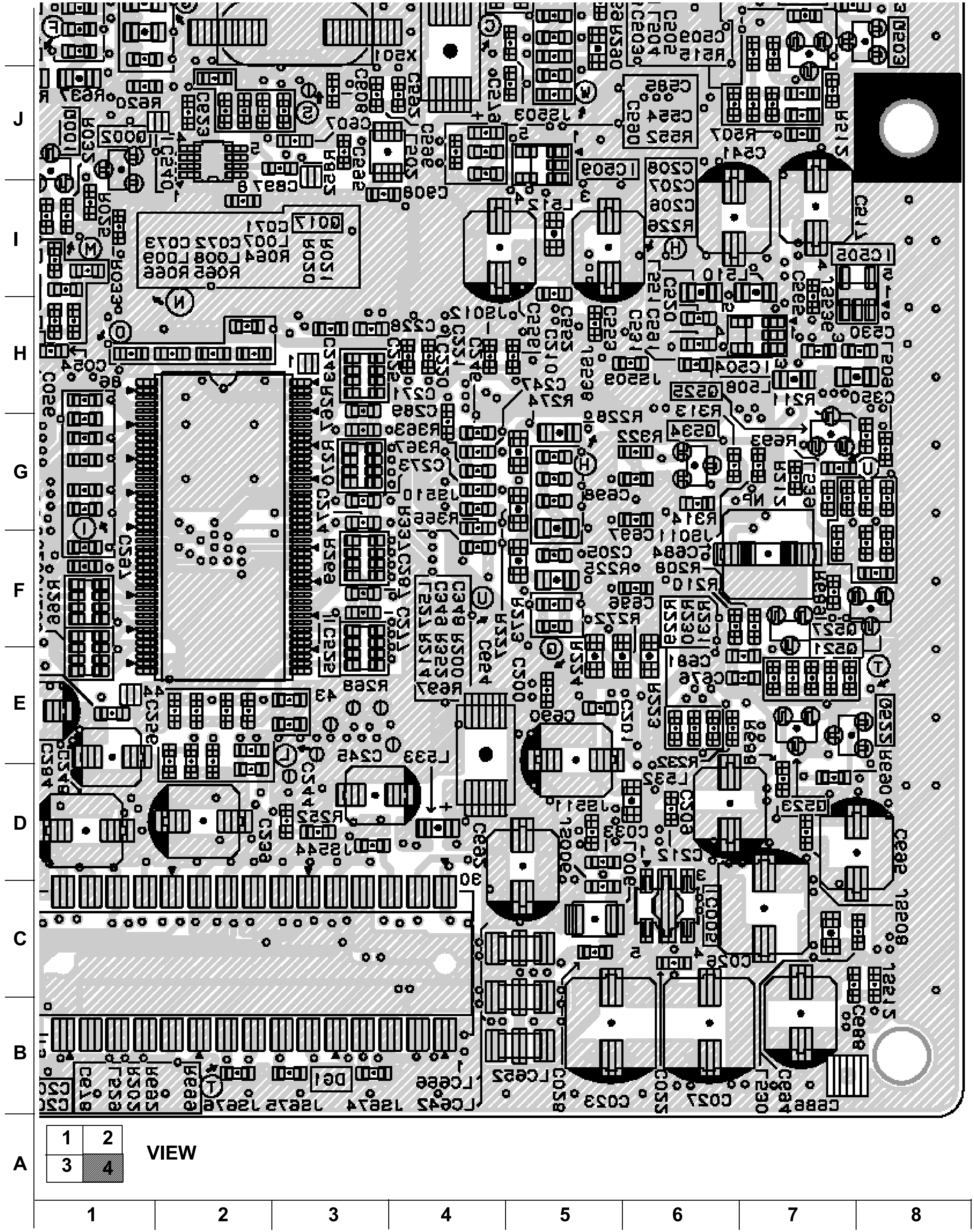
VIEW

DG-BOARD TOP-VIEW 3/4 TNP2AA126 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG


J
I
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A
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VIEW
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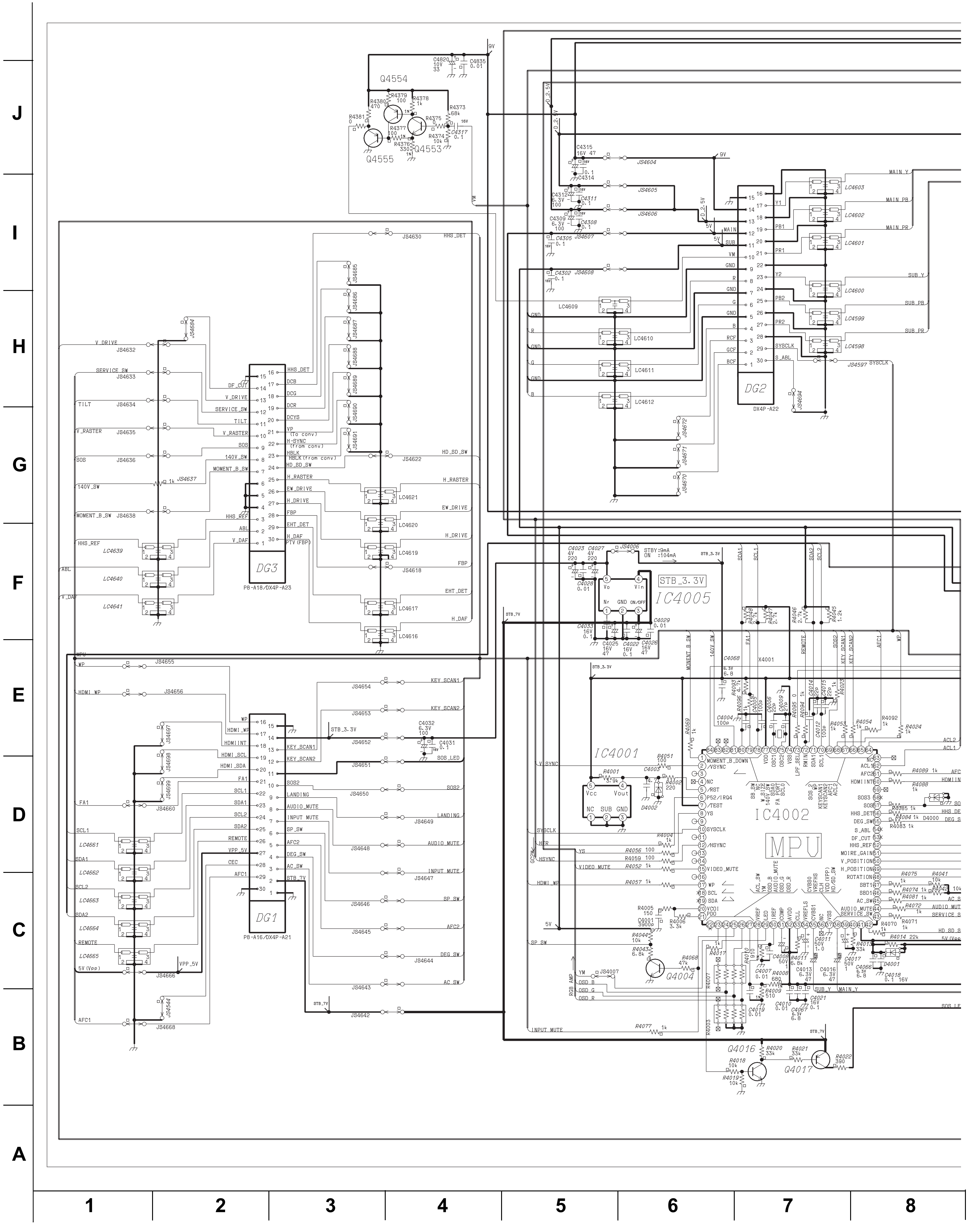
DG-BOARD TOP-VIEW 4/4 TNP2AA126 CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG



J
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8
9V
C4820 10V 33
C4835 0.01
Q4554
R4380 470
R4379 100
R4378 1k
R4373 68k
R4381 0
R4375 0
R4377 100
C4317 0.1
R4376 330
R4374 10k
Q4553
Q4555
VM
D_2.5V
C4315 16V 47
C4314 0.1
JS4604
C4312 6.3V 100
C4311 0.1
JS4605
JS4606
C4309 6.3V 100
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C4305 0.1
JS4607
C4302 0.1
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LC4609
LC4610
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MAIN_Y
MAIN_PB
MAIN_PR
SUB_Y
SUB_PB
SUB_PR
LC4603
LC4602
LC4601
LC4600
LC4599
LC4598
SYSCLK
S_ABL
JS4597
JS4694
DG2
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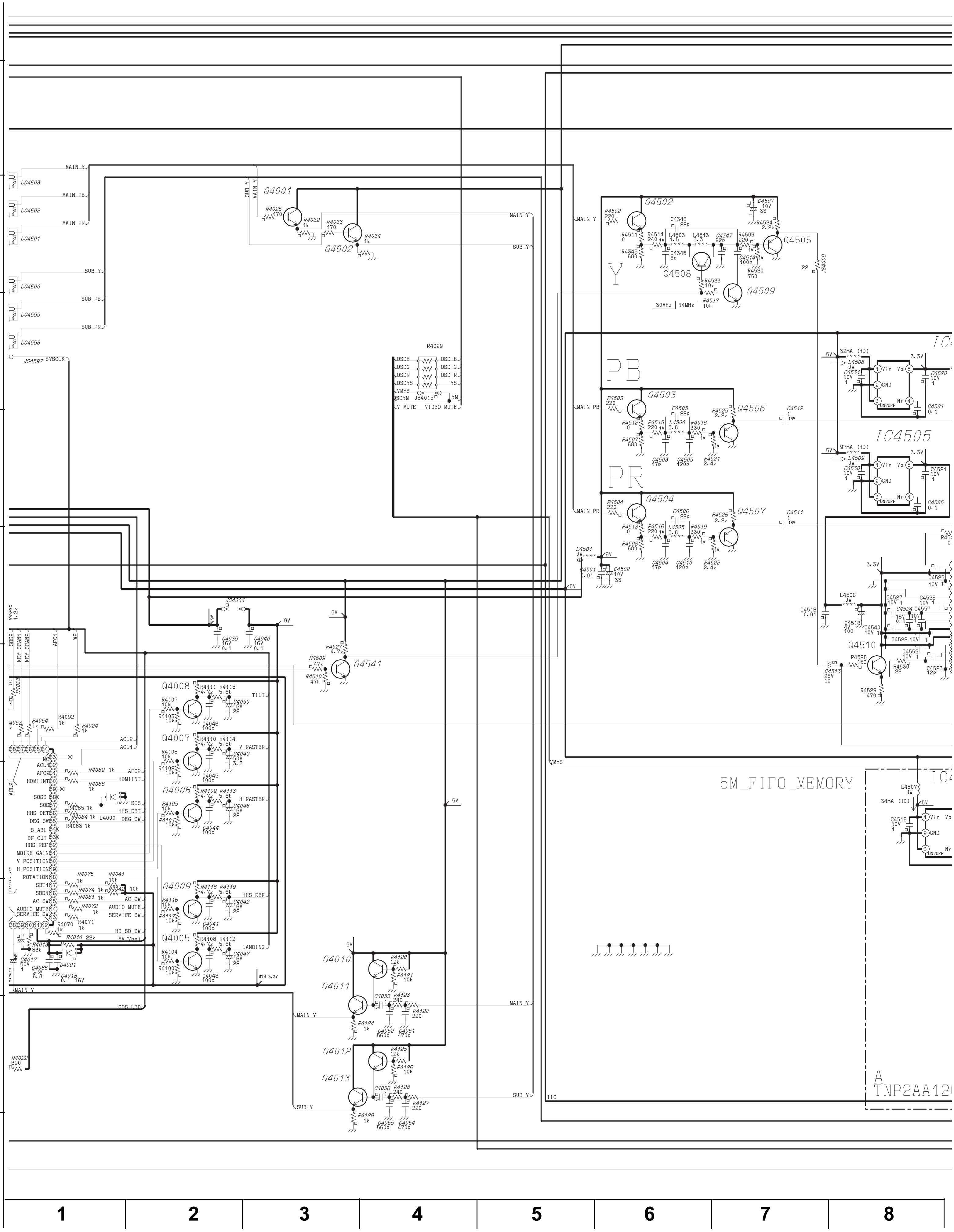
JS4672
JS4671
JS4670
JS4630
HHS_DET
JS4685
JS4686
JS4687
JS4688
JS4689
JS4690
JS4691
JS4684
V_DRIVE
JS4632
SERVICE_SW
JS4633
TILT
JS4634
V_RASTER
JS4635
SOS
JS4636
140V_SW
JS4637
MOMENT_B_SW
JS4638
HHS_REF
LC4639
ABL
LC4640
V_DAF
LC4641
DF_CUT
DCB
DCG
DCR
DCYS
VP (To conv)
H-SYNC (from conv)
HBLK (from conv)
HD_SD_SW
H_RASTER
EW_DRIVE
H_DRIVE
FBP
EHT_DET
H_DAF
PTV(FBP)
DG3
P8-A18/DX4P-A23
JS4622
LC4621
LC4620
LC4619
JS4618
LC4617
LC4616
C4023 4V 220
C4027 4V 220
JS4006
STBY:9mA ON :104mA
STB_3.3V
C4028 0.01
IC4005
C4033 16V 0.1
C4025 16V 47
C4022 16V 0.1
C4026 16V 47
C4029 0.01
STB_7V
MPU
WP
JS4655
HDMI_WP
JS4656
KEY_SCAN1
JS4654
KEY_SCAN2
JS4653
C4032 6.3V 100
C4031 0.1
JS4652
JS4651
SOS_LED
SOS2
JS4650
LANDING
JS4649
AUDIO_MUTE
JS4648
INPUT MUTE
JS4647
SP_SW
JS4646
AFC2
JS4645
DEG_SW
JS4644
AC_SW
JS4643
JS4642
JS4697
JS4698
JS4699
HDMIINT
HDMI_SCL
HDMI_SDA
FA1
SCL1
SDA1
SCL2
SDA2
REMOTE
VPP_5V
CEC
AFC1
JS4660
LC4661
LC4662
LC4663
LC4664
LC4665
5V(Vpp)
JS4666
JS4544
JS4668
DG1
P8-A16/DX4P-A21
IC4001
R4001 3.9k
C4003 4.7
R4002 220
D4002
R4051 100
Vcc
Vout
NC
SUB
GND
IC4002
MPU
X4001
C4068 6.3V 6.8
R4093 4.7k
R4096 1k
C4004 100p
C4005 100p
C4006 22p
C4009 22p
R4095 0
R4094 1k
C4014 22p
C4015 22p
R4023 1k
C4012 100p
R4053 1k
R4054 1k
R4092 1k
R4024 1k
R4048 2.7k
R4047 2.7k
R4046 2.7k
R4045 1.2k
R4069 1k
MOMENT_B_DOWN
/VSYNC
/RST
P52/IRQ4
/TEST
YS
SYSCLK
/HSYNC
VIDEO_MUTE
SCL
SDA
VCOI
PDO
V_SYNC
HFR
HSYNC
HDMI_WP
R4004 1k
R4056 100
R4059 100
R4052 1k
R4057 1k
R4005 150
C4001 3900p
R4006 3.3k
R4044 10k
R4043 6.8k
R4068 47k
Q4004
JS4007
RGB AMP
YM
OSD_B
OSD_G
OSD_R
R4007
R4003
R4017
R4010 910
C4007 0.01
R4008 680
R4009 510
C4008 50V 1
R4011 6.8k
C4013 6.3V 47
C4016 6.3V 47
C4011 50V 1.0
C4017 50V 1
C4066 6.3V 6.8
C4018 0.1 16V
C4010 0.01
C4019 0.01
C4021 16V 0.1
C4067 6.3V 6.8
SUB_Y
MAIN_Y
R4070 1k
R4013 33k
D4001
R4014 22k
R4071 1k
R4072 1k
R4081 1k
R4074 1k
R4042
R4075 1k
R4041 10k
R4085 1k
R4084 1k
R4083 1k
D4000
R4089 1k
R4088 1k
ACL2
ACL1
AFC
HDMIIN
SO
HHS_DE
DEG_S
AC_S
AUDIO_MUT
SERVICE_S
HD_SD_S
5V(Vpp
SOS_LE
INPUT MUTE
R4077 1k
STB_7V
Q4016
R4020 33k
R4021 33k
Q4017
R4022 390
R4018 10k
R4019 10k
5V
SP_SW
GC2M

DG-BOARD 1/6 TNP2AA126AB/DG CT-36HL43G/UG, CT-32HL43G/UG, CT-32HXC43UG



J
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B
A
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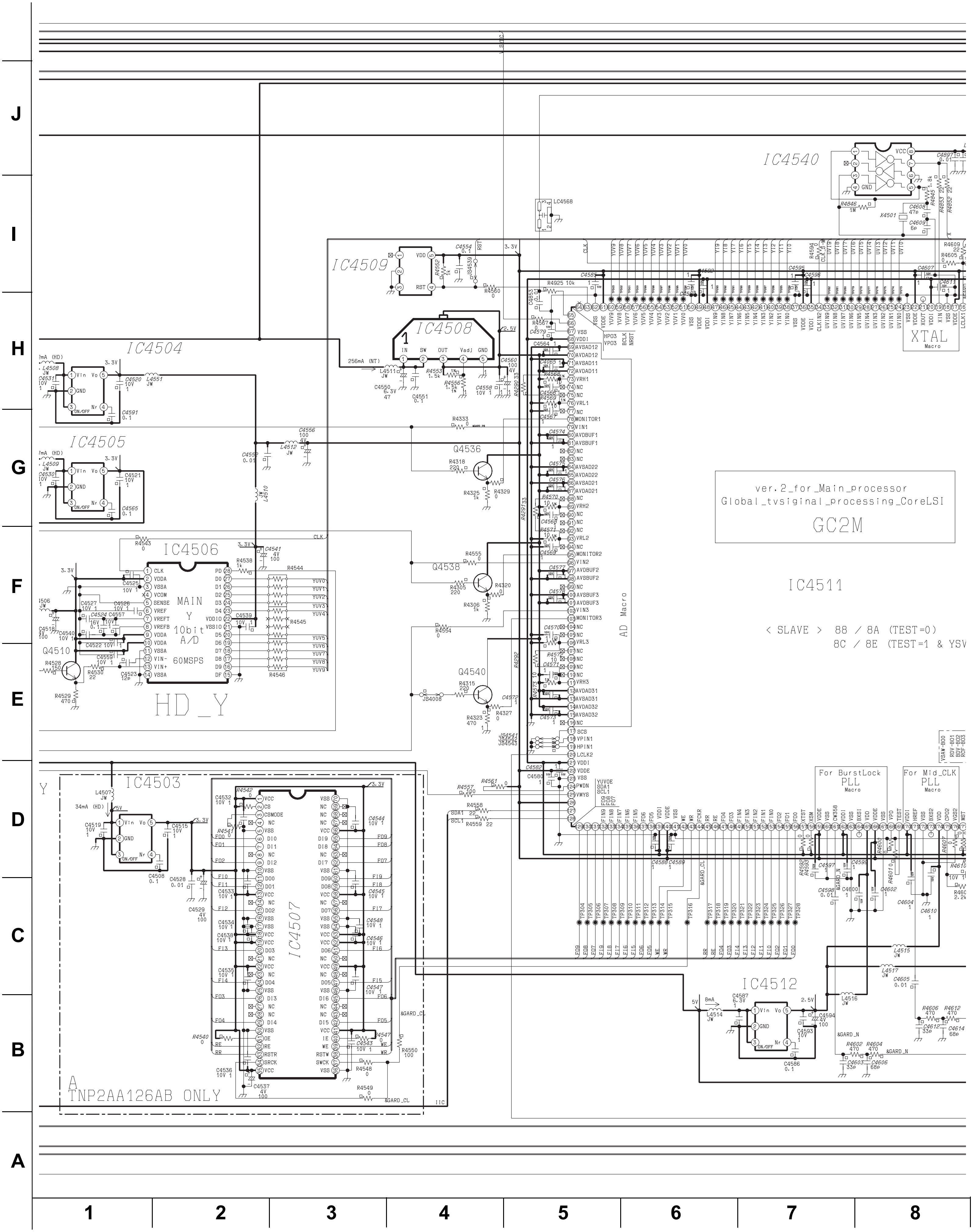
LC4603
LC4602
LC4601
LC4600
LC4599
LC4598
MAIN_Y
MAIN_PB
MAIN_PR
SUB_Y
SUB_PB
SUB_PR
JS4597 SYSCLK
Q4001
Q4002
R4025 470
R4032 1k
R4033 470
R4034 1k
R4029
OSDB
OSDG
OSDR
OSDYS
VMYS
OSDYM
JS4015
OSD_B
OSD_G
OSD_R
YS
YM
V_MUTE
VIDEO_MUTE
Q4502
Q4503
Q4504
Q4505
Q4506
Q4507
Q4508
Q4509
Q4510
Y
PB
PR
R4502 220
R4503 220
R4504 220
R4511 0
R4512 0
R4513 0
R4349 680
R4507 680
R4508 680
R4514 240
R4515 220
R4516 220
L4503 1.5
L4504 5.6
L4505 5.6
L4513 3.3
C4346 22p
C4345 5p
C4347 22p
C4505 22p
C4506 22p
R4506 220
R4518 330
R4519 330
C4514 100p
R4520 750
R4523 10k
R4517 10k
30MHz
14MHz
C4507 10V 33
R4524 2.2k
R4525 2.2k
R4526 2.2k
R4521 2.4k
R4522 2.4k
C4503 47p
C4504 47p
C4509 120p
C4510 120p
C4512 1 16V
C4511 1 16V
JS4009
22
IC4505
5V
3.3V
32mA (HD)
97mA (HD)
L4508 JW
L4509 JW
C4531 10V 1
C4530 10V 1
Vin
Vo
GND
ON/OFF
Nr
C4520 10V 1
C4521 10V 1
C4591 0.1
C4565 0.1
L4501 JW
9V
C4501 0.01
C4502 10V 33
JS4004
C4039 16V 0.1
C4040 16V 0.1
R4527 4.7k
R4509 47k
R4510 47k
Q4541
C4516 0.01
L4506 JW
C4525 10V 1
C4526 10V 1
C4527 10V 1
C4524 16V 0.1
C4557 10V 1
C4518 4V 100
C4540 10V 1
C4522 10V 1
C4559 10V 1
R4528 150
R4530 22
C4513 25V 10
C4523 12p
R4529 470
Q4008
Q4007
Q4006
Q4009
Q4005
R4111 4.7k
R4115 5.6k
R4107 10k
R4103 10k
C4046 100p
C4050 16V 22
TILT
R4110 4.7k
R4114 5.6k
R4106 10k
R4102 10k
C4045 100p
C4049 50V 3.3
V_RASTER
R4109 4.7k
R4113 5.6k
R4105 10k
R4101 10k
C4044 100p
C4048 16V 22
H_RASTER
R4118 4.7k
R4119 5.6k
R4116 10k
R4117 10k
C4041 100p
C4042 16V 22
HHS_REF
R4108 4.7k
R4112 5.6k
R4104 10k
R4100 10k
C4043 100p
C4047 16V 22
LANDING
STB_3.3V
SOS2
KEY_SCAN1
KEY_SCAN2
AFC1
WP
R4023
R4054 1k
R4092 1k
R4024 1k
ACL2
ACL1
NC
AFC2
HDMIINT
R4089 1k
R4088 1k
SOS3
SOS
HHS_DET
DEG_SW
S_ABL
DF_CUT
HHS_REF
MOIRE_GAIN
V_POSITION
H_POSITION
ROTATION
SBT1
SBD1
AC_SW
AUDIO_MUTE
SERVICE_SW
HD_SD_SW
5V(Vpp)
R4085 1k
R4084 1k
D4000
R4083 1k
R4075 1k
R4041 10k
R4074 1k
R4042 10k
R4081 1k
R4072 1k
R4071 1k
R4070 1k
R4014 22k
R4013 33k
C4017 50V 1
C4066 6.3V 6.8
D4001
C4018 0.1 16V
SOS_LED
R4022 390
Q4010
Q4011
Q4012
Q4013
R4120 12k
R4121 10k
C4053 1
R4123 240
R4122 220
R4124 1k
C4052 560p
C4051 470p
R4125 12k
R4126 10k
C4056 1
R4128 240
R4127 220
R4129 1k
C4055 560p
C4054 470p
VMYS
IIC
5M_FIFO_MEMORY
L4507 JW
34mA (HD)
C4519 10V 1
A
TNP2AA12


IC4540
IC4509
IC4508
IC4504
IC4505
IC4506
MAIN Y 10bit A/D 60MSPS
HD_Y
IC4503
IC4507
A
TNP2AA126AB ONLY
IC4511
IC4512
Q4536
Q4538
Q4540
Q4510
ver.2_for_Main_processor
Global_tvsiginal_processing_CoreLSI
GC2M
< SLAVE > 88 / 8A (TEST=0)
8C / 8E (TEST=1 & YSV
AD Macro
XTAL Macro
For BurstLock PLL Macro
For Mid_CLK PLL Macro
LC4568
X4501
256mA (NT)
34mA (HD)
8mA
3.3V
2.5V
5V
CLK
RST
VDD
IN SW OUT Vadj GND
Vin Vo GND ON/OFF Nr
VCC GND
YUV0 YUV1 YUV2 YUV3 YUV4 YUV5 YUV6 YUV7 YUV8 YUV9
MONITOR1 MONITOR2 MONITOR3
SDA1 SCL1
&GARD_CL
&GARD_N
IIC
JS4008
JS4539
TP304 … TP328
J
I
H
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F
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D
C
B
A
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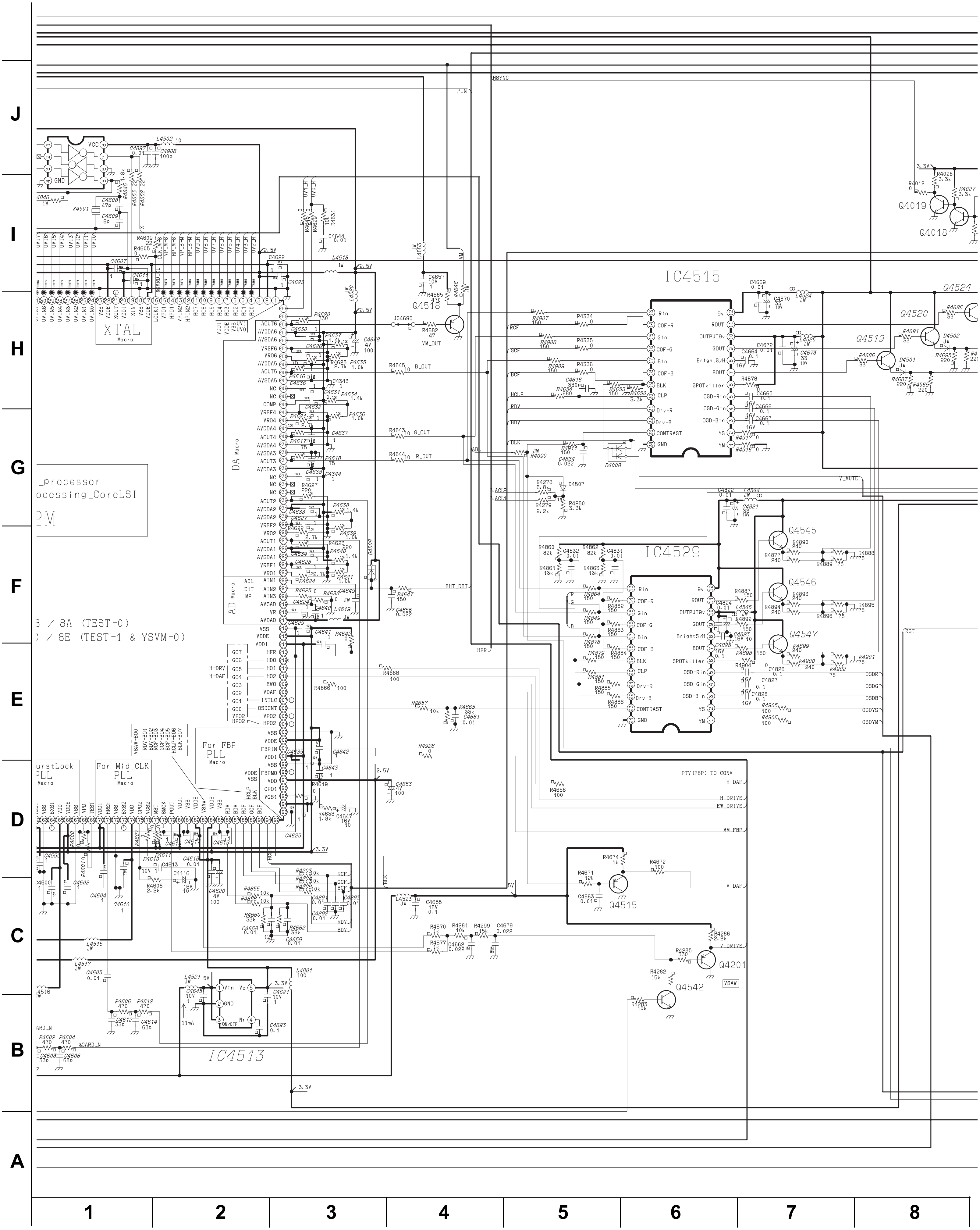
J
I
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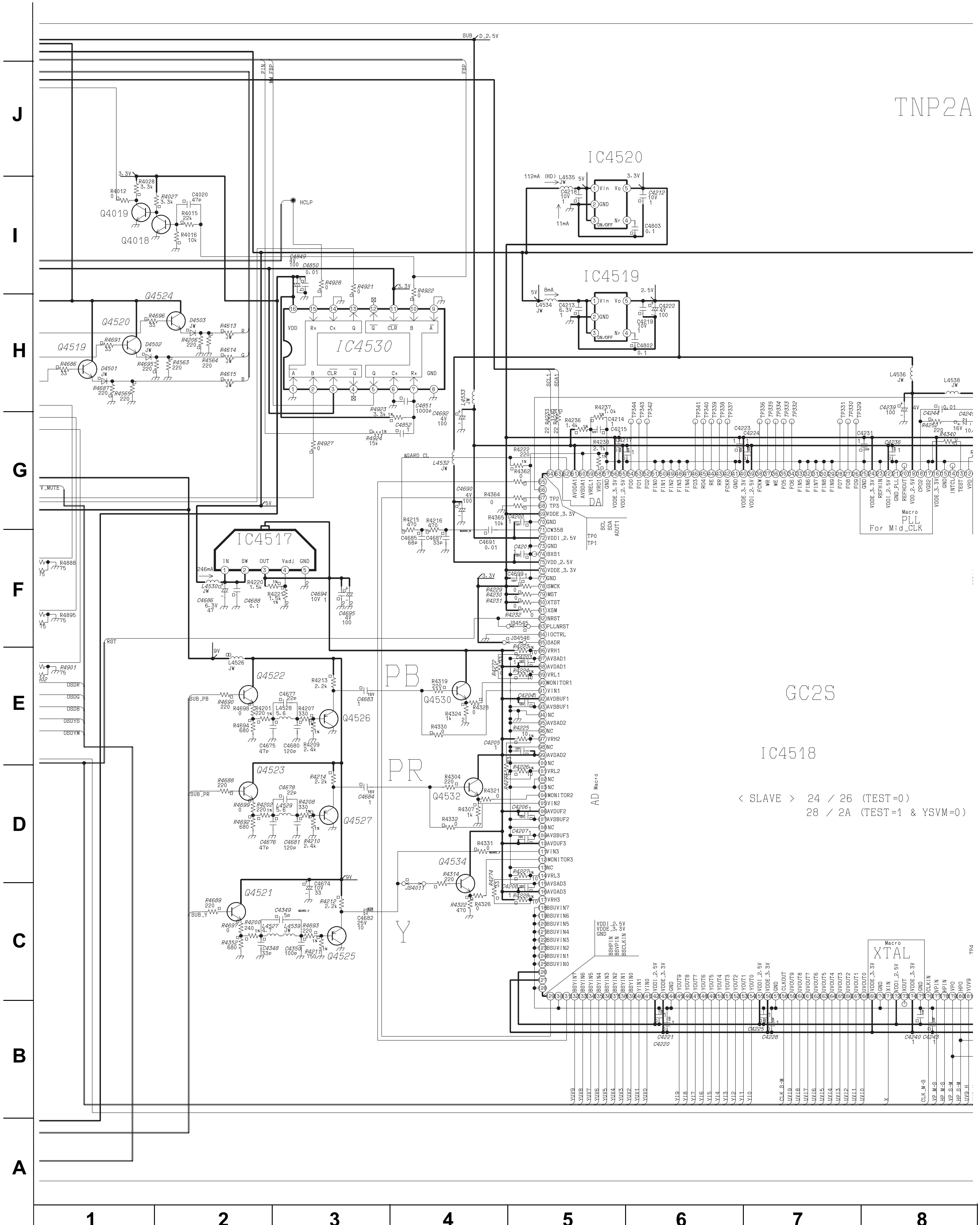
8
HSYNC
PIN
IC4515
IC4529
IC4513
Q4518
Q4515
Q4201
Q4542
Q4545
Q4546
Q4547
Q4519
Q4520
Q4524
Q4019
Q4018
X4501
XTAL
Macro
DA Macro
AD Macro
_processor
ocessing_CoreLSI
2M
3 / 8A (TEST=0)
: / 8E (TEST=1 & YSVM=0)
For FBP
PLL
Macro
For Mid_CLK
PLL
Macro
urstLock
PLL
Macro
VM_OUT
B_OUT
G_OUT
R_OUT
EHT DET
HFR
ABL
ACL2
ACL1
V_MUTE
RST
PTV(FBP) TO CONV
H_DAF
H_DRIVE
EW_DRIVE
MM_FBP
V_DAF
V_DRIVE
VSAW
OSDR
OSDG
OSDB
OSDYS
OSDYM
RCF
GCF
BCF
BLK
HCLP
RDV
BDV
H-DRV
H-DAF
&GARD_N
11mA
2.5V
3.3V
5V
D4508
D4507
D4008
D4501
D4502
L4502
L4518
L4520
L4519
L4523
L4521
L4801
L4544
L4545
L4525
L4524
L4515
L4517
L4516
JS4695


TNP2A
IC4520
IC4519
IC4530
IC4517
IC4518
GC2S
< SLAVE > 24 / 26 (TEST=0)
28 / 2A (TEST=1 & YSVM=0)
PB
PR
Y
AD Macro
Macro PLL For Mid_CLK
Macro XTAL
DA
SUB_D_2.5V
HCLP
V_MUTE
RST
SUB_PB
SUB_PR
SUB_Y
OSDR
OSDG
OSDB
OSDYS
OSDYM
Q4019
Q4018
Q4524
Q4520
Q4519
Q4522
Q4526
Q4523
Q4527
Q4521
Q4525
Q4530
Q4532
Q4534
J
I
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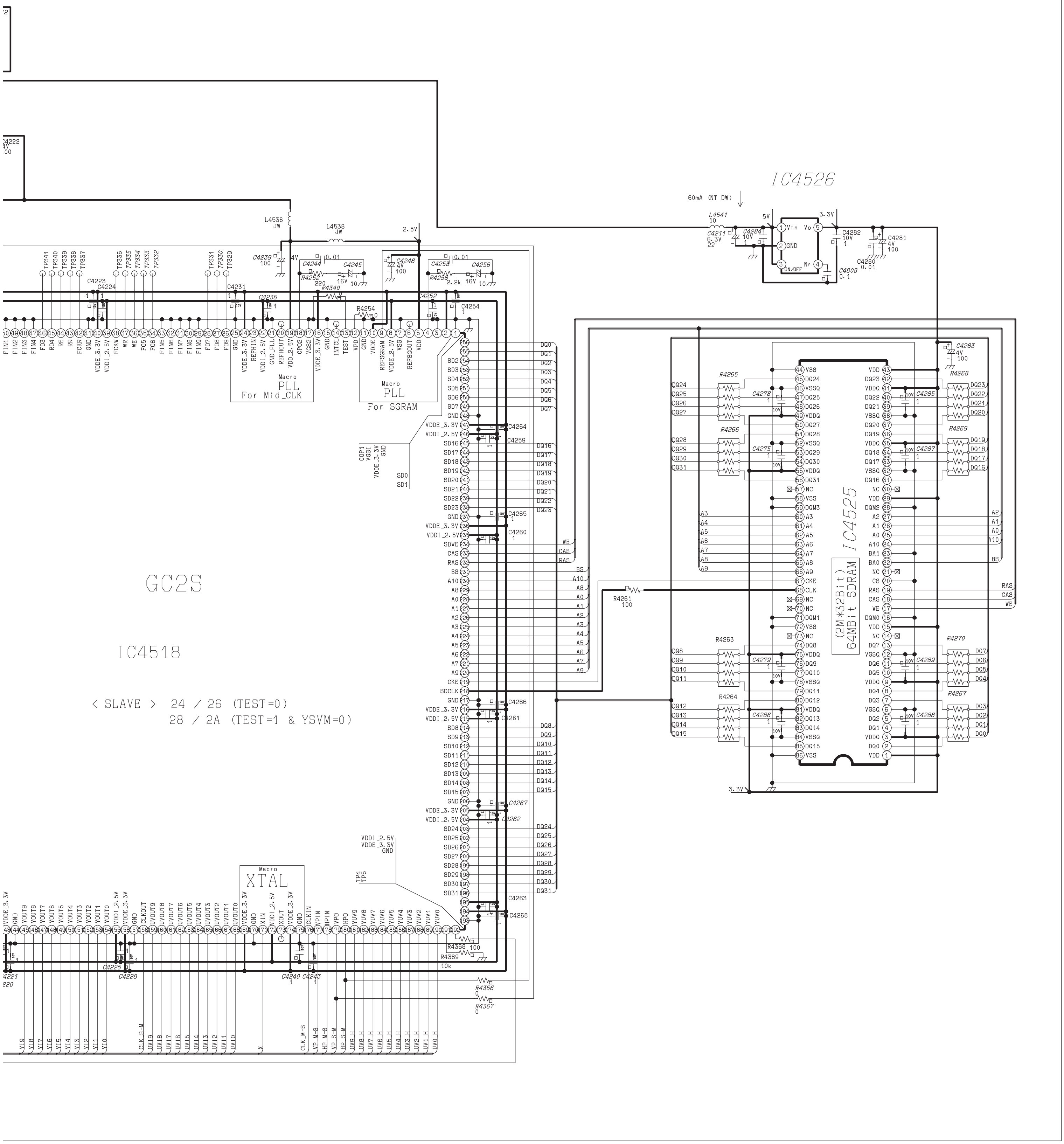
TNP2AA126AB, AC (DG)


IC4526
60mA (NT DW)
L4541 10
C4211 6.3V 22
C4284 10V 1
5V
3.3V
Vin Vo
GND
ON/OFF
Nr
C4282 10V 1
C4281 4V 100
C4280 0.01
C4808 0.1
L4536 JW
L4538 JW
2.5V
C4239 100
C4244
C4245 16V 10
R4252 220
R4340
C4248 4V 100
C4253
C4256 16V 10
R4258 2.2k
R4254 0
C4223
C4224
C4231
C4236
C4252
C4254
TP341 TP340 TP339 TP338 TP337 TP336 TP335 TP334 TP333 TP332 TP331 TP330 TP329
Macro PLL For Mid_CLK
Macro PLL For SGRAM
GC2S
IC4518
< SLAVE > 24 / 26 (TEST=0)
28 / 2A (TEST=1 & YSVM=0)
Macro XTAL
C4264
C4259
C4265
C4260
C4266
C4261
C4267
C4262
C4263
C4268
R4368 100
R4369 10k
R4366 0
R4367 0
C4221 220
C4225
C4228
C4240
C4243
R4261 100
IC4525
(2M*32Bit) 64MBit SDRAM
C4283 4V 100
R4265
R4266
R4263
R4264
R4268
R4269
R4270
R4267
C4278
C4275
C4279
C4286
C4285
C4287
C4289
C4288
3.3V
J
I
H
G
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D
C
B
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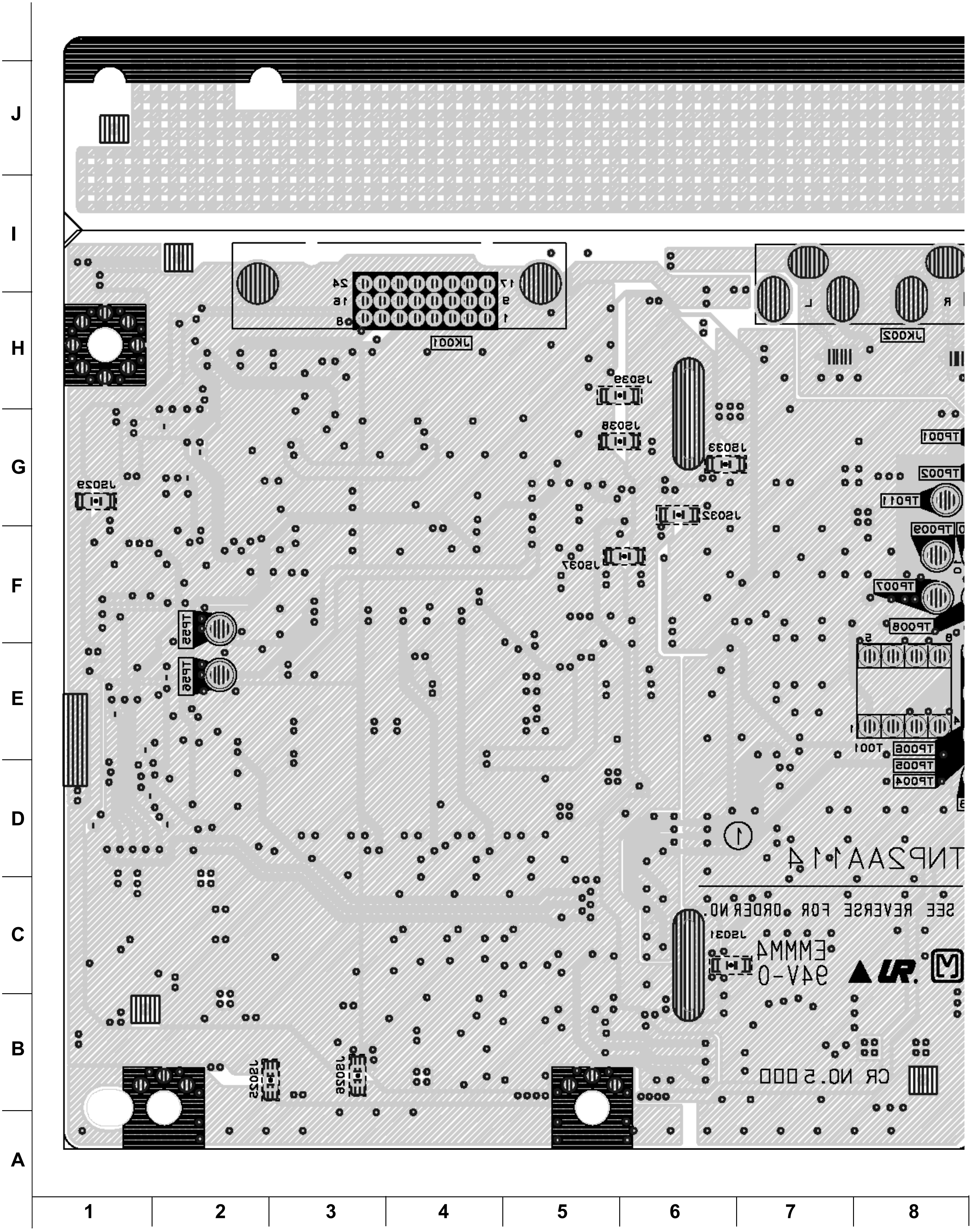
J
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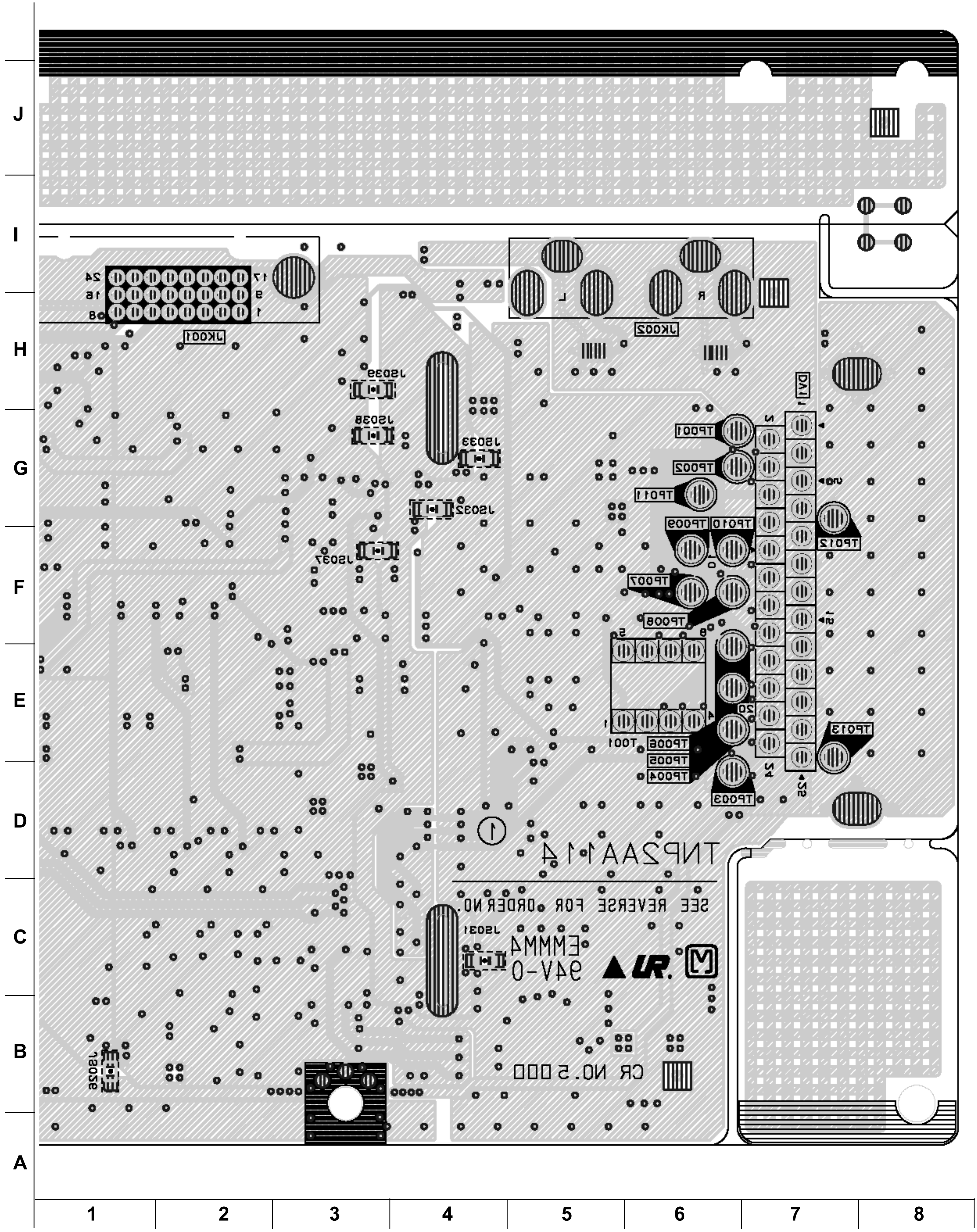
TP001
TP002
TP011
TP009
TP007
TP008
TP006
TP005
TP004
TP55
TP56
T001

DV-BOARD BOTTOM-VIEW 1/2 TNP2AA114 CT-36HL43G/UG, CT-32HL43G/UG,


J
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7
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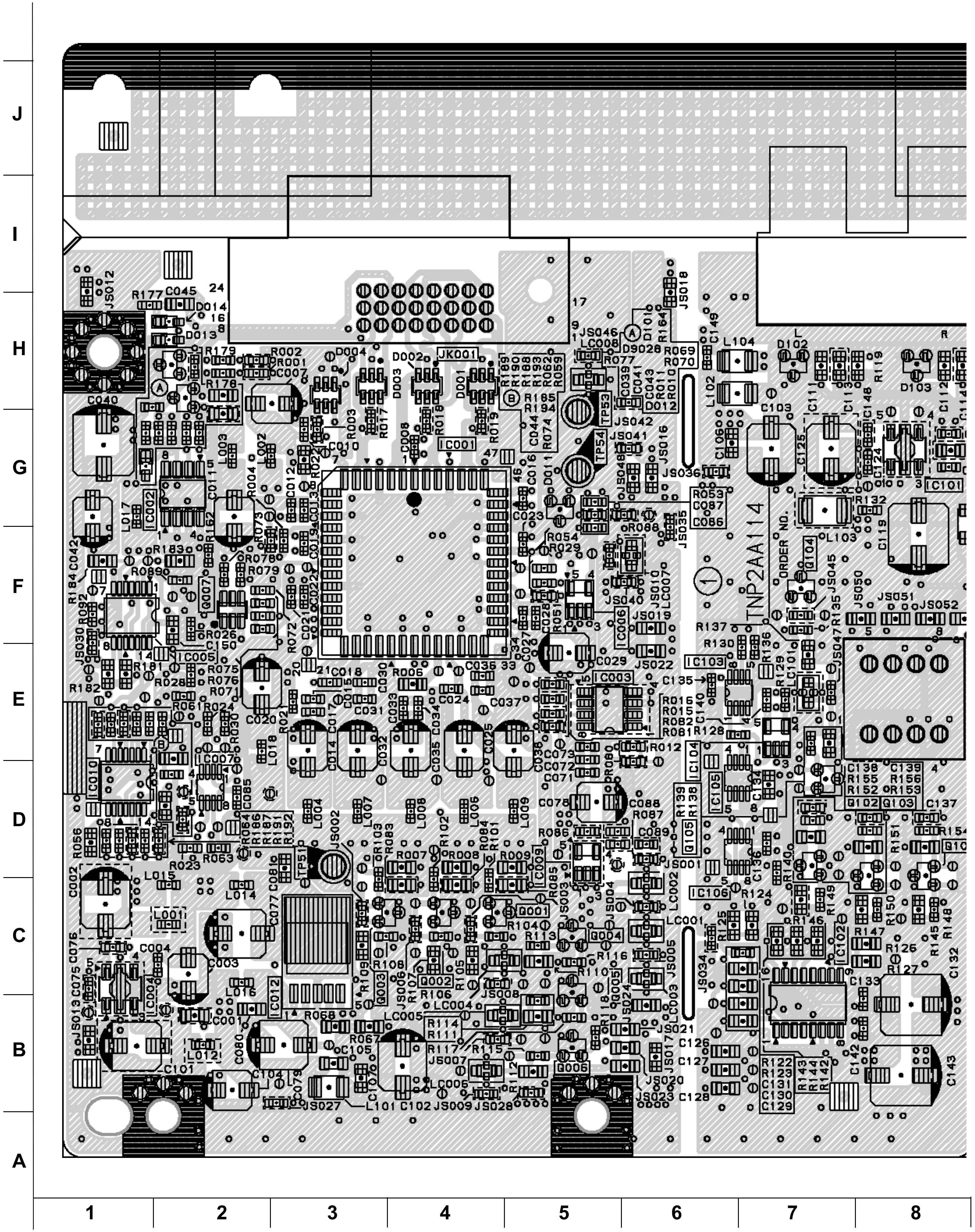
JK001
JK002
JS039
JS038
JS033
JS032
JS037
JS031
JS026
TP001
TP002
TP003
TP004
TP005
TP006
TP007
TP008
TP009
TP010
TP011
TP012
TP013
T001
DA1
TNP2AA114
SEE REVERSE FOR ORDER NO.
EMMM4
94V-0
CR NO.5000

DV-BOARD BOTTOM-VIEW 2/2 TNP2AA114 CT-36HL43G/UG, CT-32HL43G/UG


J
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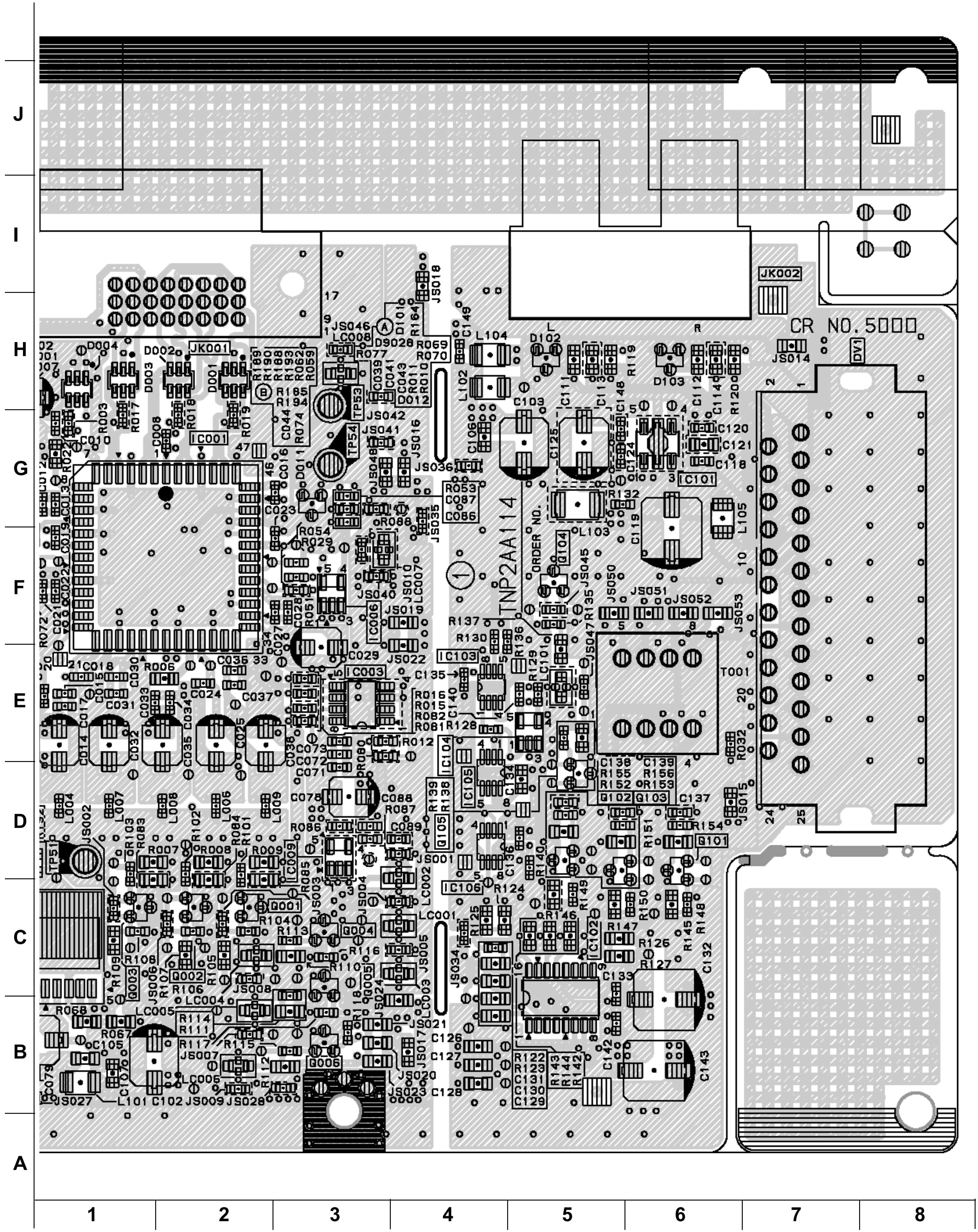
TNP2AA114
ORDER NO.
JK001
IC001
IC002
IC003
IC004
IC005
IC007
IC010
IC012
IC101
IC102
IC103
IC104
IC105
IC106
TP51
TP53
TP54
L101
L102
L103
L104
Q001
Q002
Q003
Q004
Q005
Q006
Q007
Q102
Q103
Q104
Q105
D001
D002
D003
D004
D011
D012
D013
D014
D102
D103
L
R

DV-BOARD TOP-VIEW 1/2 TNP2AA114 CT-36HL43G/UG, CT-32HL43G/UG,



J
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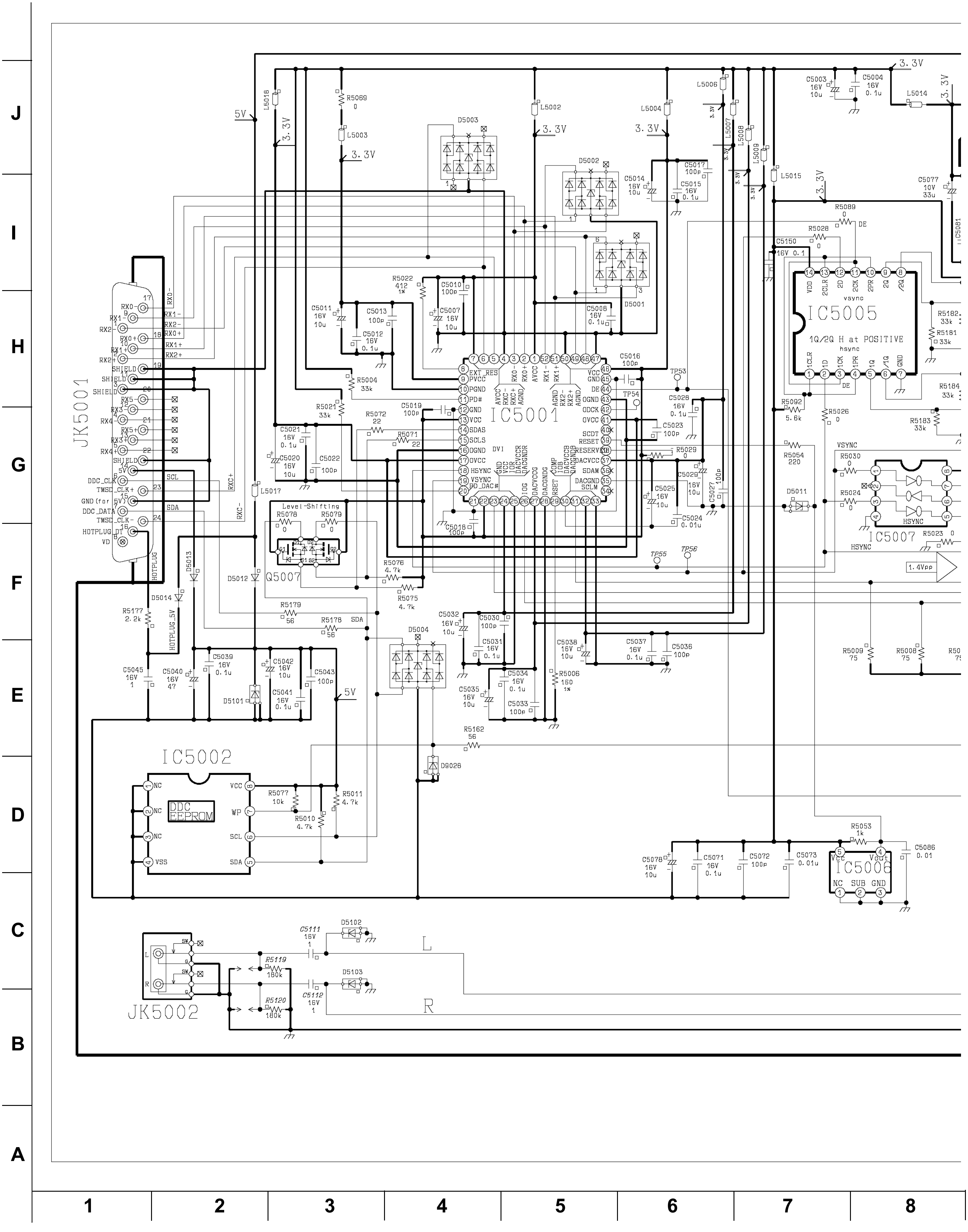
7
8
TNP2AA114
ORDER NO.
CR NO.5000
JK001
JK002
IC001
IC003
IC006
IC101
IC102
IC103
IC104
IC105
IC106
T001
TP51
TP53
TP54
DV1
L103
L104
L105
Q101
Q102
Q103

DV-BOARD TOP-VIEW 2/2 TNP2AA114 CT-36HL43G/UG, CT-32HL43G/UG,



J
I
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C
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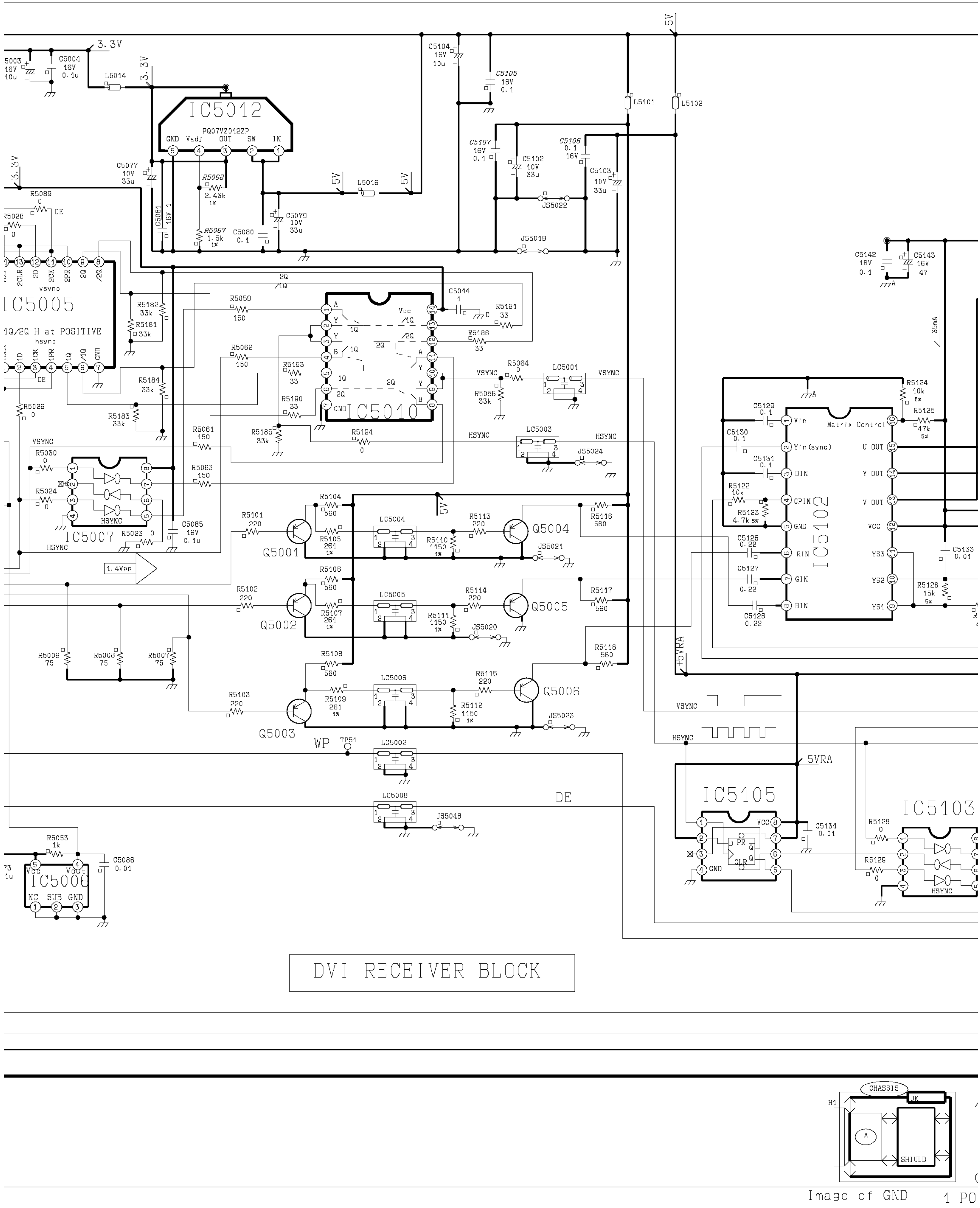
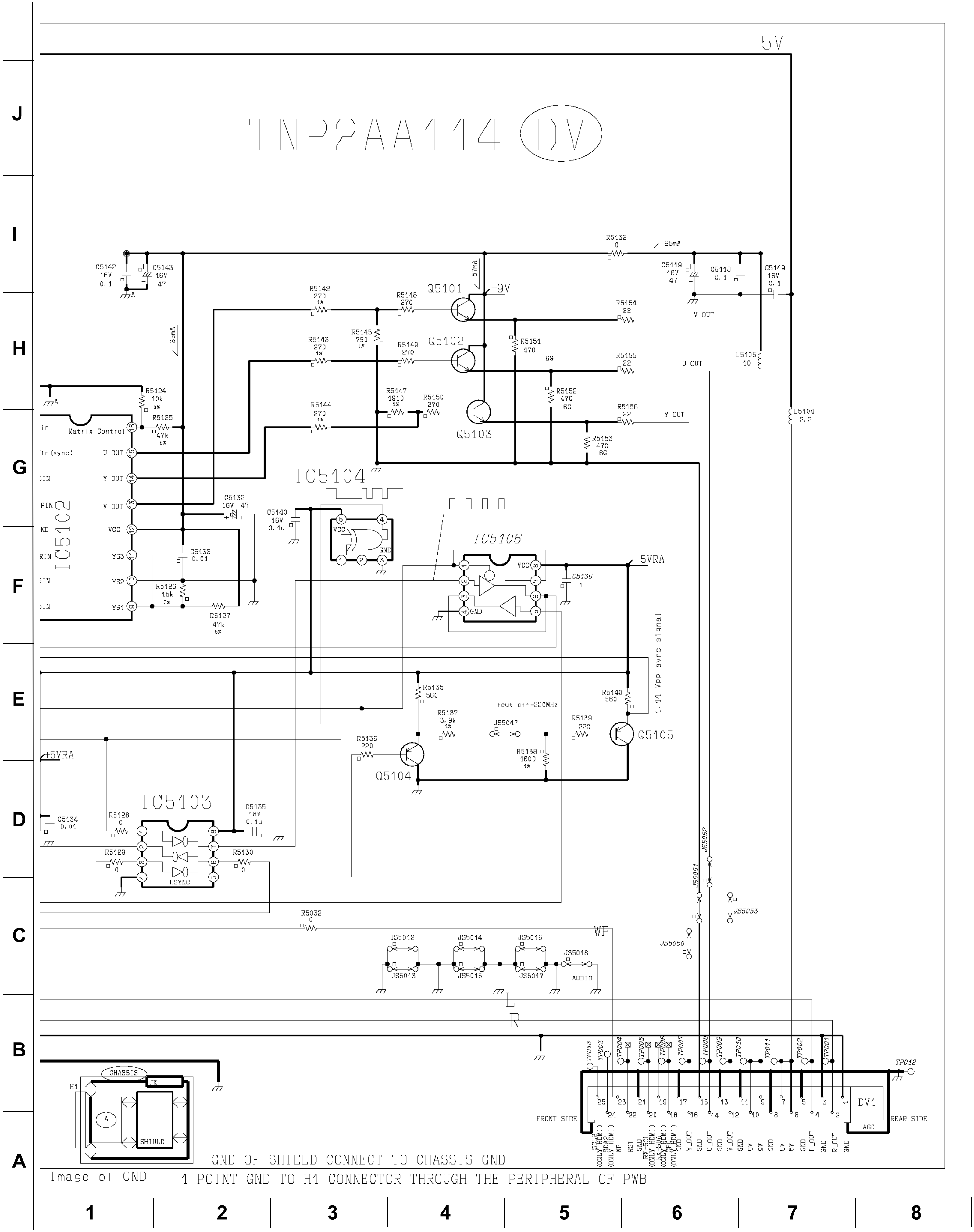
7
8
JK5001
RX0-
RX1-
RX2-
RX0+
RX1+
RX2+
SHIELD
RX5-
RX3-
RX4-
RX5+
RX3+
RX4+
5V
DDC_CLK
TMSD_CLK+
GND (for 5V)
DDC_DATA
TMSD_CLK-
HOTPLUG_DT
VD
SCL
SDA
RXC+
RXC-
HOTPLUG
HOTPLUG_5V
5V
3.3V
L5018
L5003
R5069 0
D5003
L5002
L5004
L5006
L5007
L5008
L5009
L5015
L5014
L5017
D5002
D5001
C5003 16V 10u
C5004 16V 0.1u
C5014 16V 10u
C5017 100p
C5015 16V 0.1u
C5077 10V 33u
C5081
C5150 16V 0.1
R5089 0
R5028 0
DE
IC5005
1Q/2Q H at POSITIVE
vsync
hsync
R5182 33k
R5181 33k
R5184 33k
R5183 33k
R5092 5.6k
R5026 0
R5054 220
R5030 0
R5024 0
VSYNC
HSYNC
D5011
IC5007
R5023 0
1.4Vpp
R5022 412 1%
C5010 100p
C5007 16V 10u
C5011 16V 10u
C5013 100p
C5012 16V 0.1u
C5008 16V 0.1u
C5016 100p
TP53
TP54
TP55
TP56
IC5001
DVI
EXT_RES
PVCC
PGND
PD#
GND
VCC
SDAS
SCLS
OGND
OVCC
HSYNC
VSYNC
PD_DAC#
AVCC
RXC-
RXC+
AGND
RX0-
RX0+
RX1-
RX1+
RX2-
RX2+
OGND
ODCK
OVCC
SCDT
RESET
RESERVED
DACVCC
SDAM
DACGND
SCLM
IOR
IOG
IOB
DACVCCG
DACGNDG
RSET
COMP
DACVCCR
DACGNDR
DACVCCB
DACGNDB
R5004 33k
R5021 33k
R5072 22
R5071 22
C5019 100p
C5021 16V 0.1u
C5020 16V 10u
C5022 100p
C5026 16V 0.1u
C5023 100p
R5029 0
C5029 16V 10u
C5027 100p
C5025 16V 10u
C5024 0.01u
C5018 100p
Level-Shifting
R5078 0
R5079 0
Q5007
R5076 4.7k
R5075 4.7k
D5012
D5013
D5014
R5177 2.2k
R5179 56
R5178 56
SDA
D5004
C5032 16V 10u
C5030 100p
C5031 16V 0.1u
C5038 16V 10u
C5037 16V 0.1u
C5036 100p
R5006 150 1%
C5034 16V 0.1u
C5035 16V 10u
C5033 100p
C5039 16V 0.1u
C5042 16V 10u
C5043 100p
C5041 16V 0.1u
C5045 16V 1
C5040 16V 47
D5101
R5162 56
D9026
R5009 75
R5008 75
IC5002
DDC EEPROM
NC
VSS
VCC
WP
SCL
SDA
R5077 10k
R5010 4.7k
R5011 4.7k
R5053 1k
C5086 0.01
IC5006
Vcc
Vout
NC
SUB
GND
C5078 16V 10u
C5071 16V 0.1u
C5072 100p
C5073 0.01u
JK5002
L
R
SW
G
C5111 16V 1
C5112 16V 1
D5102
D5103
R5119 180k
R5120 180k

DV-BOARD 1/3 TNP2AA114 CT-36HL43G/UG, CT-32HL43G/UG,



J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
3.3V
5V
5003
C5004
16V
10u
0.1u
L5014
IC5012
PQ07VZ012ZP
GND
Vadj
OUT
SW
IN
C5077
10V
33u
R5068
2.43k
R5067
1.5k
C5081
16V
C5080
0.1
C5079
10V
33u
L5016
C5104
16V
10u
C5105
16V
0.1
L5101
L5102
C5107
16V
0.1
C5102
10V
33u
C5106
0.1
16V
C5103
10V
33u
JS5022
JS5019
R5089
0
DE
R5028
IC5005
2CLR
2D
2CK
2PR
2Q
/2Q
vsync
1Q/2Q H at POSITIVE
hsync
1D
1CK
1PR
1Q
/1Q
GND
R5182
33k
R5181
33k
R5184
33k
R5183
33k
R5026
0
R5059
150
R5062
150
R5193
33
R5190
33
R5185
33k
IC5010
Vcc
A
Y
B
1Q
2Q
/1Q
/2Q
C5044
1
R5191
33
R5186
33
VSYNC
R5064
0
LC5001
R5056
33k
HSYNC
R5194
0
LC5003
JS5024
R5061
150
R5063
150
R5030
0
R5024
0
IC5007
R5023
0
C5085
16V
0.1u
1.4Vpp
R5101
220
R5102
220
R5103
220
Q5001
Q5002
Q5003
R5104
560
R5105
261
R5106
560
R5107
261
R5108
560
R5109
261
LC5004
LC5005
LC5006
R5110
1150
R5111
1150
R5112
1150
R5113
220
R5114
220
R5115
220
Q5004
Q5005
Q5006
JS5021
JS5020
JS5023
R5116
560
R5117
560
R5118
560
R5009
75
R5008
75
R5007
75
WP
TP51
LC5002
DE
LC5008
JS5048
R5053
1k
C5086
0.01
IC5006
Vcc
Vout
NC
SUB
GND
C5142
16V
0.1
C5143
16V
47
35mA
R5124
10k
R5125
47k
IC5102
Vin
Yin(sync)
BIN
CPIN
GND
RIN
GIN
Matrix Control
U OUT
Y OUT
V OUT
VCC
YS3
YS2
YS1
C5129
0.1
C5130
0.1
C5131
0.1
R5122
10k
R5123
4.7k
C5126
0.22
C5127
0.22
C5128
0.22
C5133
0.01
R5126
15k
+5VRA
VSYNC
HSYNC
IC5105
PR
CLR
Q
C5134
0.01
IC5103
R5128
0
R5129
0
CHASSIS
JK
H1
SHIULD
Image of GND
1 PO

DVI RECEIVER BLOCK



TNP2AA114 DV
5V
R5132 0
95mA
C5142 16V 0.1
C5143 16V 47
C5119 16V 47
C5118 0.1
C5149 16V 0.1
57mA
+9V
Q5101
Q5102
Q5103
Q5104
Q5105
R5142 270 1%
R5143 270 1%
R5144 270 1%
R5145 750 1%
R5147 1910 1%
R5148 270
R5149 270
R5150 270
R5151 470
R5152 470 6G
R5153 470 6G
6G
R5154 22
R5155 22
R5156 22
V OUT
U OUT
Y OUT
L5105 10
L5104 2.2
35mA
R5124 10k 5%
R5125 47k 5%
R5126 15k 5%
R5127 47k 5%
Matrix Control
U OUT
Y OUT
V OUT
VCC
YS3
YS2
YS1
In
In(sync)
IC5102
C5132 16V 47
C5133 0.01
C5140 16V 0.1u
IC5104
IC5106
VCC
GND
C5136 1
+5VRA
1.14 Vpp sync signal
R5135 560
R5136 220
R5137 3.9k 1%
R5138 1600 1%
R5139 220
R5140 560
JS5047
fcut off=220MHz
IC5103
R5128 0
R5129 0
R5130 0
C5134 0.01
C5135 16V 0.1u
HSYNC
R5032 0
WP
JS5012
JS5013
JS5014
JS5015
JS5016
JS5017
JS5018
AUDIO
JS5050
JS5051
JS5052
JS5053
L
R
TP013
TP003
TP004
TP005
TP006
TP007
TP008
TP009
TP010
TP011
TP002
TP001
TP012
FRONT SIDE
REAR SIDE
DV1
A60
SCL2 (ONLY HDMI)
SDA2 (ONLY HDMI)
WP
RST
GND
RX_SCL (ONLY HDMI)
RX_SDA (ONLY HDMI)
Y_GND (ONLY HDMI)
Y_OUT
GND
U_OUT
GND
V_OUT
GND
9V
9V
5V
5V
GND
L_OUT
GND
R_OUT
GND
CHASSIS
JK
H1
A
SHIULD
GND OF SHIELD CONNECT TO CHASSIS GND
Image of GND
1 POINT GND TO H1 CONNECTOR THROUGH THE PERIPHERAL OF PWB
J
I
H
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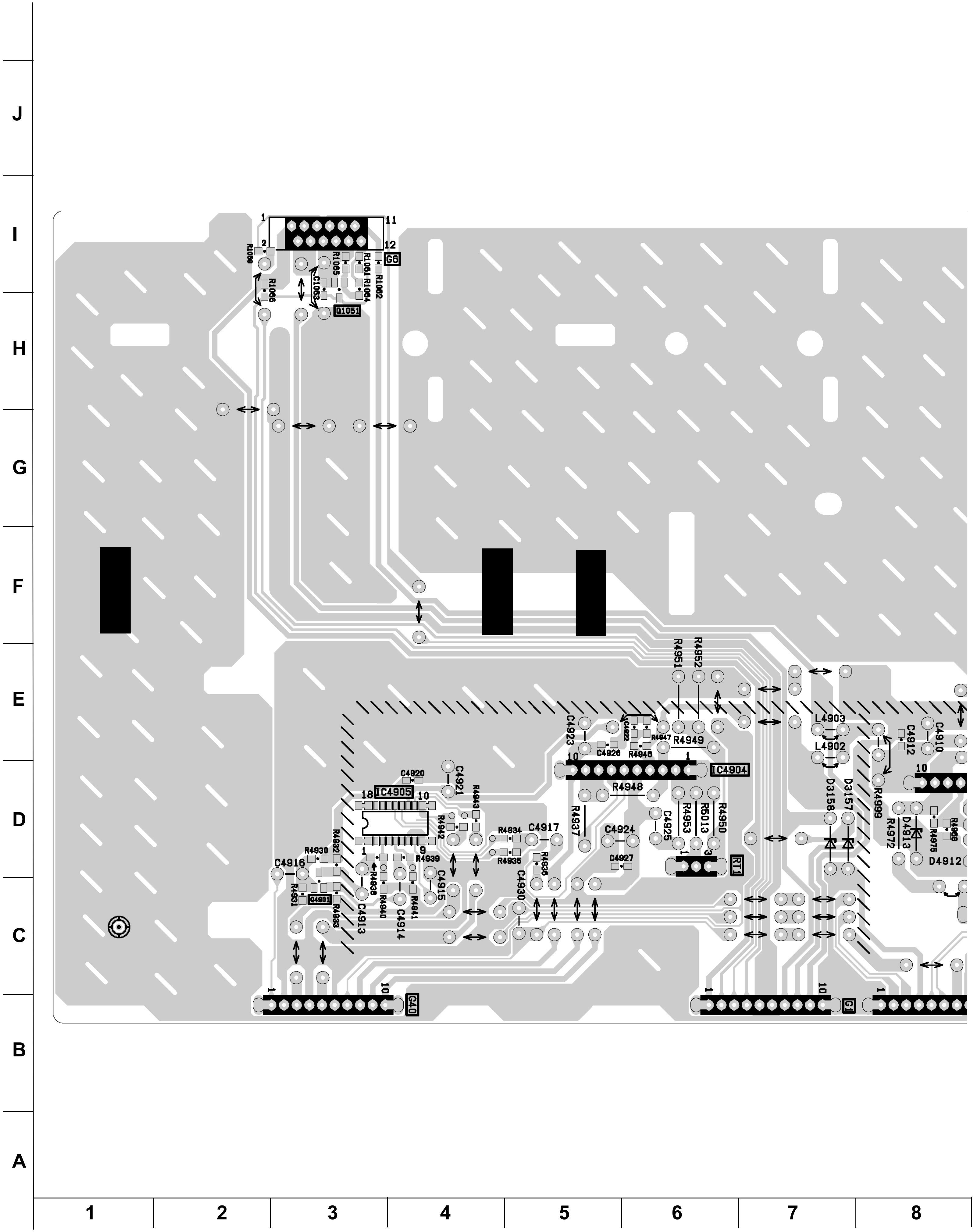
J
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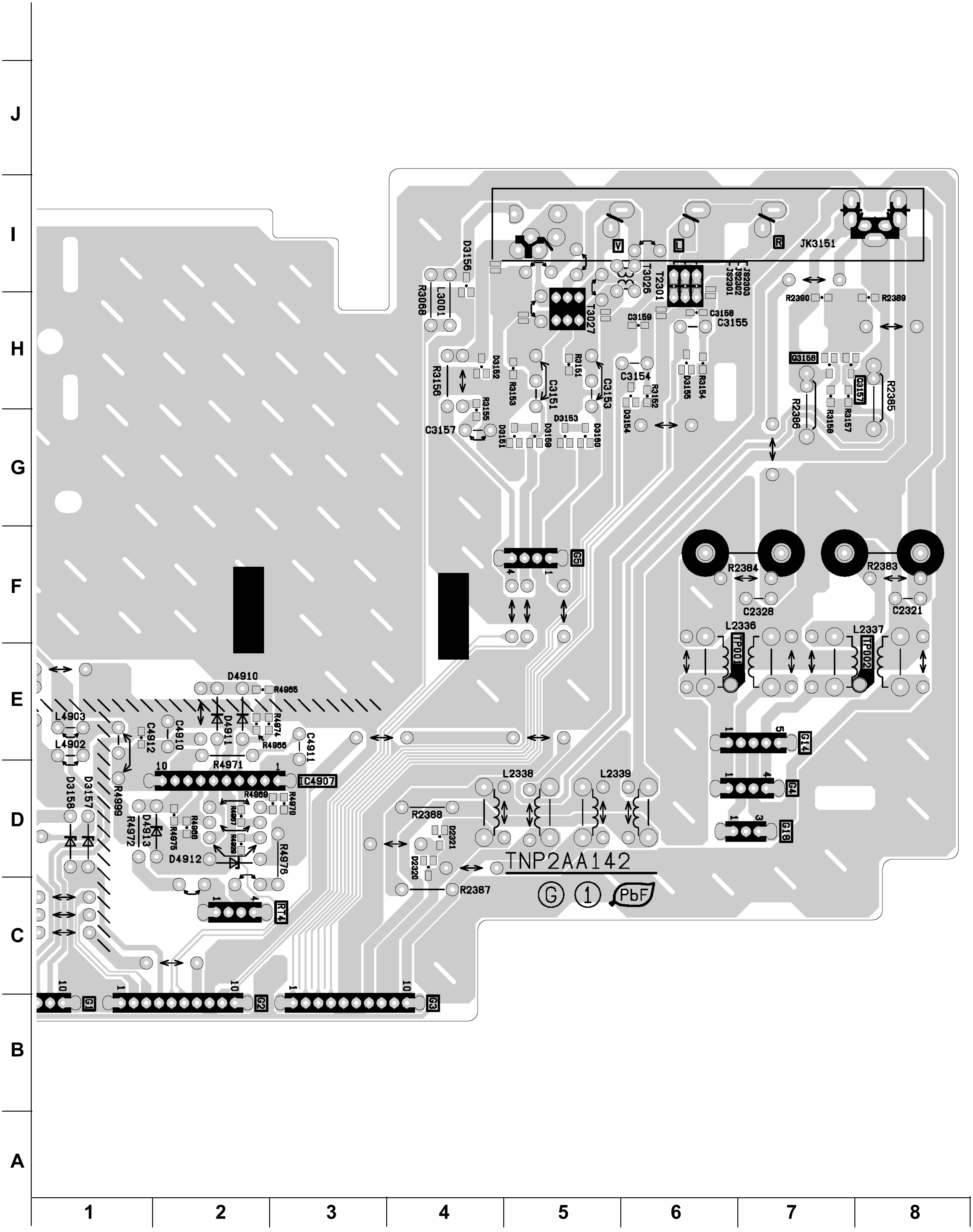
6
7
8
G6
R1066
R1065
R1061
R1062
R1064
C1063
R1056
Q1051
R4951
R4952
C4923
C4922
R4947
R4949
C4926
R4946
IC4904
R4948
R4937
C4924
C4925
R4953
R5013
R4950
C4927
RT1
L4903
L4902
C4912
C4910
D3158
D3157
R4999
R4972
D4913
R4975
R4968
D4912
C4920
C4921
IC4905
R4943
R4942
R4934
C4917
R4935
R4936
C4930
R4930
R4932
C4916
R4931
Q4901
R4933
R4938
R4939
C4915
C4913
R4940
C4914
R4941
C40
G1
1
2
9
10
11
12
18

G-BOARD 1/2 TNP2AA142 CT-36HL43G/UG, CT-32HL43G/UG


J
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A
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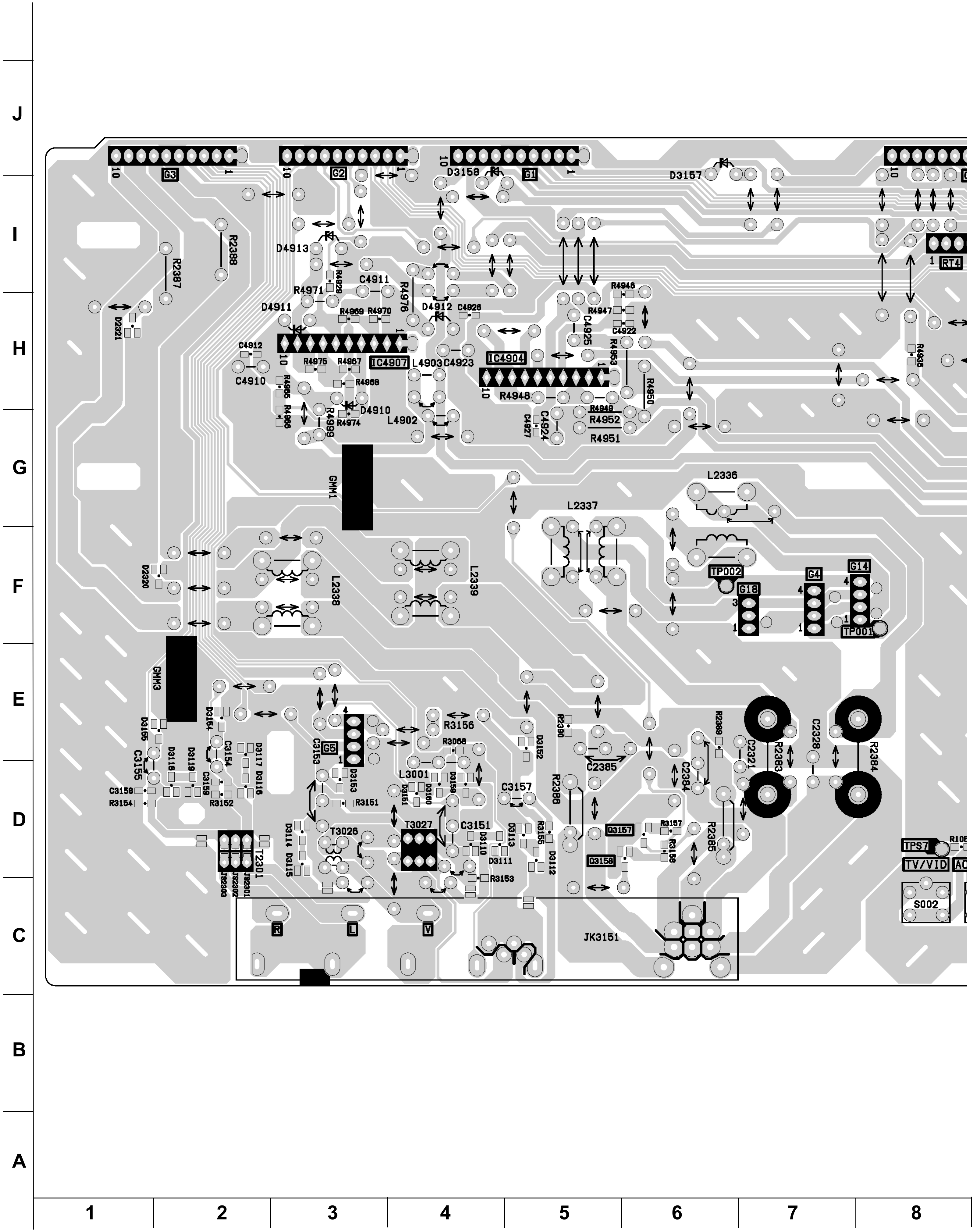
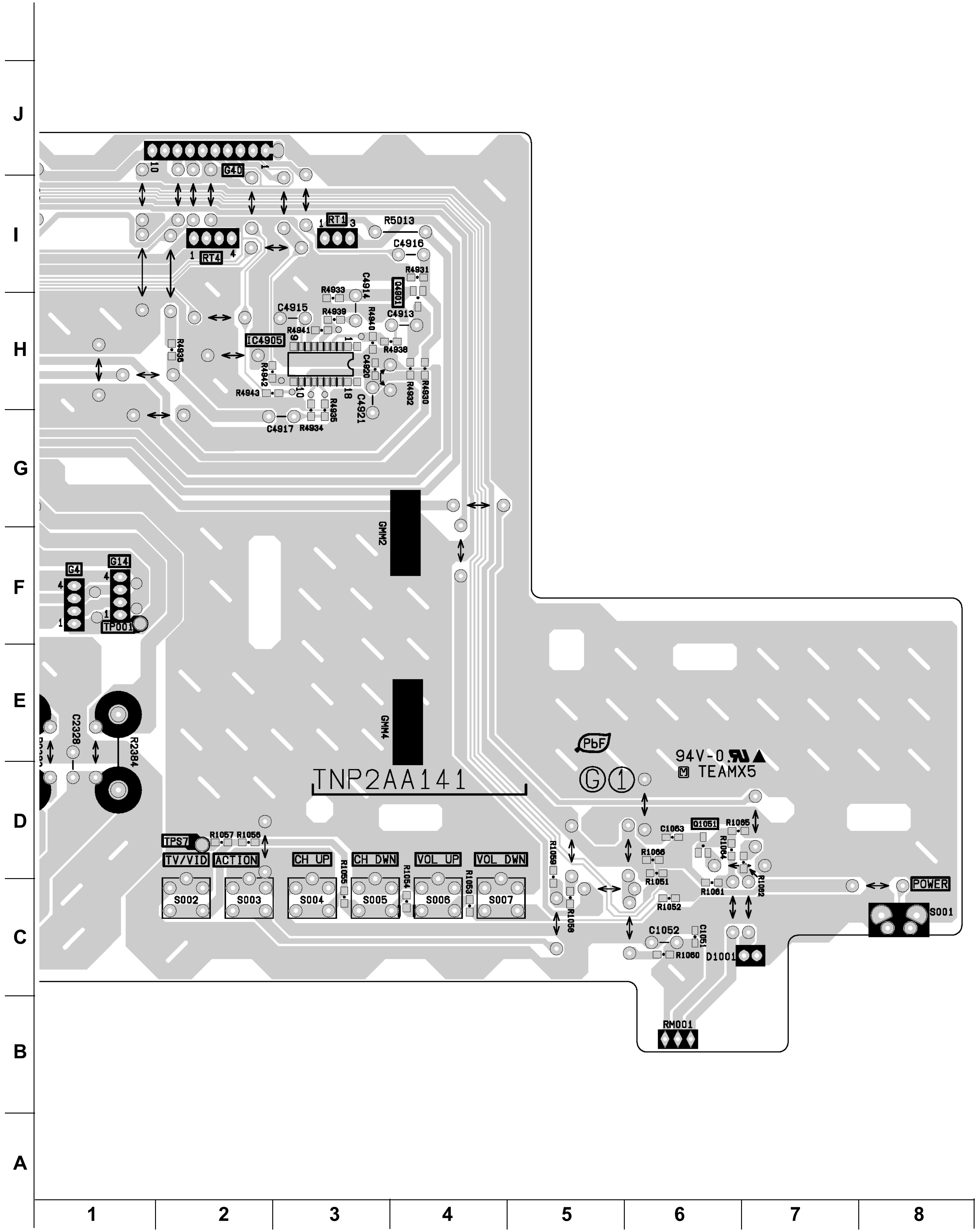
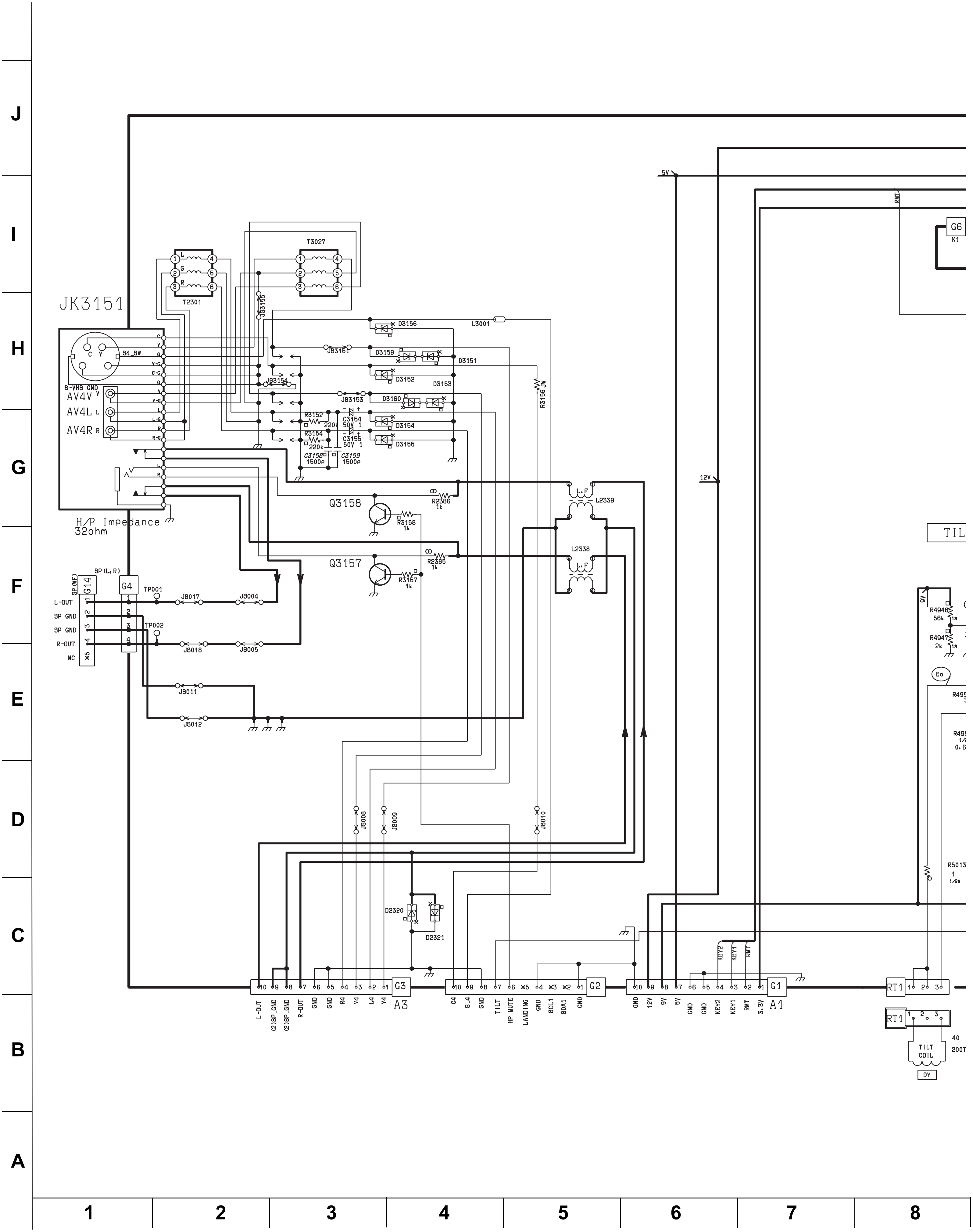
6
7
8
JK3151
V
L
R
D3156
R3068
L3001
T3026
T2301
JS2303
JS2302
JS2301
T3027
C3158
C3159
C3155
R2390
R2389
R3156
D3162
R3153
C3151
R3161
C3153
C3154
R3152
D3155
R3154
Q3158
C3157
R2385
R2386
R3158
R3157
R3155
D3153
D3154
C3157
D3151
D3159
D3160
G5
R2384
R2383
C2328
C2321
L2336
L2337
TP001
TP002
D4910
R4965
D4911
R4974
R4966
C4911
C4910
C4912
L4903
L4902
R4971
IC4907
R4999
D3158
D3157
R4969
R4970
R4967
R4968
R4975
R4972
D4913
R4929
D4912
R4976
RT4
G14
G4
G18
L2338
L2339
R2388
D2321
D2320
R2387
TNP2AA142
G
1
PbF
G1
G2
G3

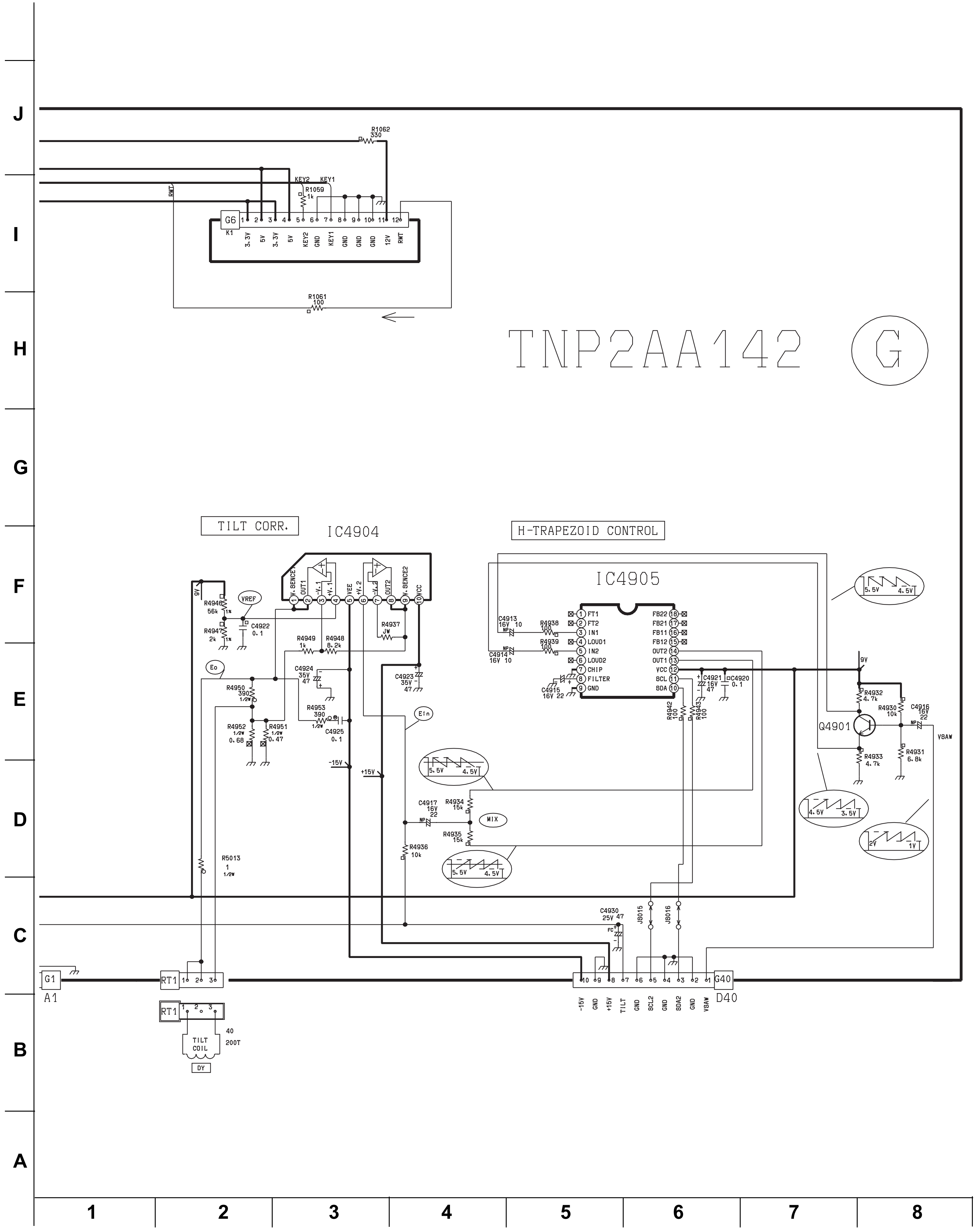
G-BOARD 2/2 TNP2AA142 CT-36HL43G/UG, CT-32HL43G/UG


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
G3
G2
G1
D3158
D3157
R2388
R2387
D4913
R4929
C4911
R4971
R4976
D4911
D4912
C4926
R4969
R4970
R4946
R4947
C4925
C4922
C2321
R4953
C4912
R4975
R4967
IC4907
L4903
C4923
IC4904
C4910
R4965
R4966
R4968
R4999
R4974
D4910
L4902
R4948
C4927
C4924
R4949
R4952
R4951
R4950
R4936
RT4
GMM1
L2336
L2337
L2338
L2339
D2320
TP002
G18
G4
G14
TP001
GMM3
D3154
D3156
C3155
D3118
D3119
C3154
C3159
D3117
D3116
C3156
R3154
R3152
C3153
G5
R3156
R3068
D3153
R3151
L3001
D3151
D3160
D3159
C3157
D3152
R2390
R2386
C2385
C2384
R2389
C2328
R2383
R2384
R2385
Q3157
R3157
Q3158
R3158
T2301
J2303
J2302
J2301
D3114
D3115
T3026
T3027
C3151
D3110
D3113
R3155
D3111
D3112
R3153
TPS7
R105
TV/VID
AC
S002
R
L
V
JK3151


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
10
1
G40
RT1
1
3
R5013
C4916
RT4
1
4
R4931
Q4901
C4914
R4933
C4915
R4939
R4940
C4913
R4941
9
1
R4938
R4936
IC4905
R4942
C4920
R4943
10
18
R4932
R4930
R4935
C4921
C4917
R4934
GMM2
G4
G14
4
1
TP001
GMM4
C2328
R2384
PbF
94V-0
TEAMX5
G1
TNP2AA141
C1063
Q1051
R1065
R1064
R1066
R1051
R1061
R1062
R1059
TPS7
R1057
R1058
TV/VID
ACTION
CH UP
CH DWN
VOL UP
VOL DWN
R1055
R1054
R1053
S002
S003
S004
S005
S006
S007
R1056
R1052
C1052
C1051
R1060
D1001
POWER
S001
RM001

G-BOARD 2/2 TNP2AA141 CT-32HXC43G/UG


JK3151
T2301
T3027
JS3155
D3156
L3001
JS3151
D3159
D3151
D3152
JS3154
D3153
R3156 JW
JS3153
D3160
R3152
220k
C3154
50V 1
D3154
R3154
220k
C3155
50V 1
D3155
C3158
1500p
C3159
1500p
S4_SW
S-VHS GND
AV4V
AV4L
AV4R
H/P Impedance
32ohm
L2339
L2338
Q3158
R2386
1k
R3158
1k
Q3157
R2385
1k
R3157
1k
SP(WF)
G14
SP(L,R)
G4
L-OUT
SP GND
SP GND
R-OUT
NC
TP001
JS017
JS004
TP002
JS018
JS005
JS011
JS012
JS008
JS009
JS010
D2320
D2321
5V
12V
RMT
G6
K1
TIL
9V
R4946
56k 1%
R4947
2k 1%
Eo
R495
R495
1/
0.6
R5013
1
1/2W
G3
A3
L-OUT
(2)SP_GND
(2)SP_GND
R-OUT
GND
GND
R4
V4
L4
Y4
C4
S_4
GND
TILT
HP MUTE
LANDING
GND
SCL1
SDA1
GND
G2
GND
12V
9V
5V
GND
GND
KEY2
KEY1
RMT
3.3V
G1
A1
RT1
RT1
TILT
COIL
DY
40
200T
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8



TNP2AA142
G
TILT CORR.
IC4904
H-TRAPEZOID CONTROL
IC4905
G6
K1
3.3V
5V
3.3V
5V
KEY2
GND
KEY1
GND
GND
GND
12V
RMT
KEY2
KEY1
R1059 1k
R1062 330
R1061 100
RMT
V.SENCE1
OUT1
-V.1
+V.1
VEE
+V.2
-V.2
OUT2
V.SENCE2
VCC
9V
R4946 56k 1%
VREF
R4947 2k 1%
C4922 0.1
R4949 1k
R4948 8.2k
R4937 JW
Eo
C4924 35V 47
C4923 35V 47
R4950 390 1/2W
R4953 390 1/2W
C4925 0.1
R4952 1/2W 0.68
R4951 1/2W 0.47
Ein
-15V
+15V
5.5V
4.5V
C4917 16V 22
NP
R4934 15k
MIX
R4935 15k
R4936 10k
R5013 1 1/2W
FT1
FT2
IN1
LOUD1
IN2
LOUD2
CHIP
FILTER
GND
FB22
FB21
FB11
FB12
OUT2
OUT1
VCC
SCL
SDA
C4913 16V 10
C4914 16V 10
R4938 100
R4939 100
C4915 16V 22
C4921 16V 47
C4920 0.1
R4942 100
R4943 100
9V
R4932 4.7k
R4930 10k
C4916 16V 22
Q4901
VSAW
R4933 4.7k
R4931 6.8k
4.5V
3.5V
2V
1V
C4930 25V 47
FC
JS015
JS016
G1
A1
RT1
G40
D40
-15V
GND
+15V
TILT
GND
SCL2
GND
SDA2
GND
VSAW
TILT COIL
DY
40
200T
J
I
H
G
F
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D
C
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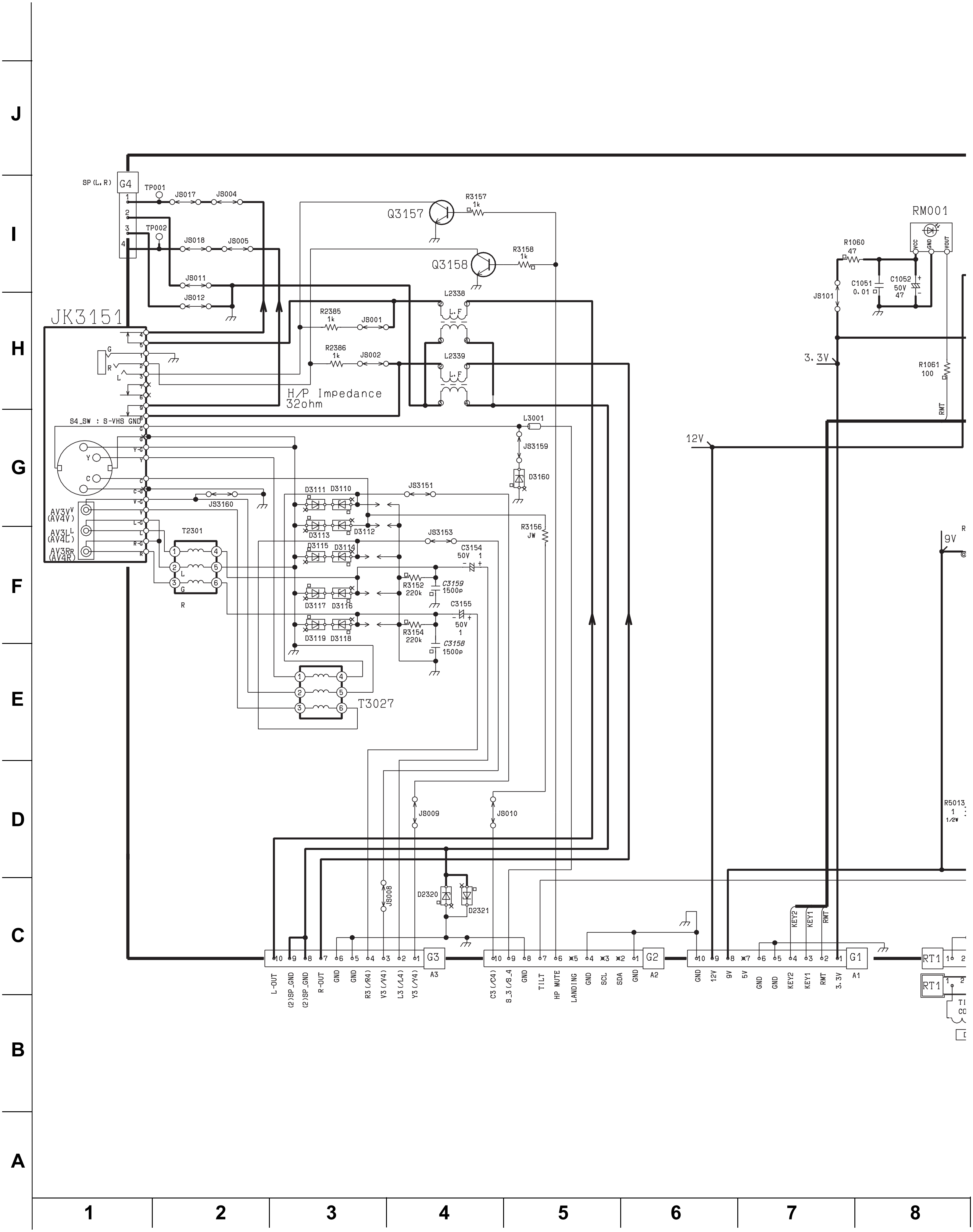
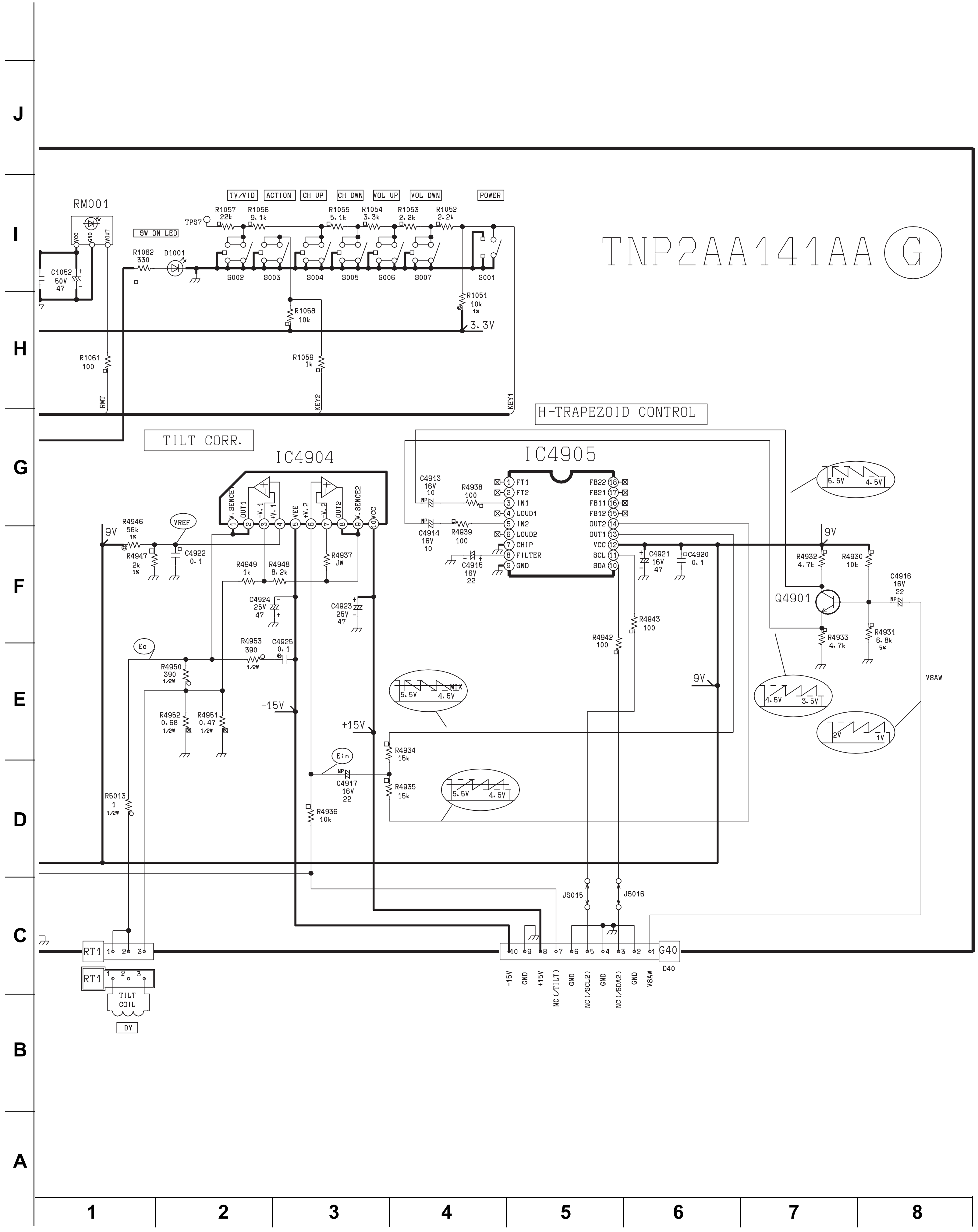

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
SP(L,R)
G4
TP001
TP002
JS017
JS004
JS018
JS005
JS011
JS012
Q3157
Q3158
R3157 1k
R3158 1k
JK3151
R2385 1k
R2386 1k
JS001
JS002
L2338
L2339
L.F
H/P Impedance 32ohm
S4_SW : S-VHS GND
L3001
JS3159
D3160
Y
C
Y-G
C-G
V-G
L-G
R-G
AV3V (AV4V)
AV3L (AV4L)
AV3R (AV4R)
JS3160
T2301
L
G
R
D3111
D3110
D3113
D3112
D3115
D3114
D3117
D3116
D3119
D3118
JS3151
JS3153
R3156 JW
C3154 50V 1
R3152 220k
C3159 1500p
C3155 50V 1
R3154 220k
C3158 1500p
T3027
JS009
JS010
JS008
D2320
D2321
L-OUT
(2)SP_GND
(2)SP_GND
R-OUT
GND
GND
R3(/R4)
V3(/V4)
L3(/L4)
Y3(/Y4)
G3
A3
C3(/C4)
S_3(/S_4
GND
TILT
HP MUTE
LANDING
GND
SCL
SDA
GND
G2
A2
GND
12V
9V
5V
GND
GND
KEY2
KEY1
RMT
3.3V
G1
A1
RT1
RM001
VCC
GND
VOUT
R1060 47
C1051 0.01
C1052 50V 47
JS101
3.3V
R1061 100
RMT
12V
9V
R5013 1 1/2W
KEY2
KEY1
RMT


TNP2AA141AA G
RM001
VCC
GND
VOUT
SW ON LED
C1052 50V 47
R1062 330
D1001
TV/VID
ACTION
CH UP
CH DWN
VOL UP
VOL DWN
POWER
TPS7
R1057 22k
R1056 9.1k
R1055 5.1k
R1054 3.3k
R1053 2.2k
R1052 2.2k
S002
S003
S004
S005
S006
S007
S001
R1051 10k 1%
R1058 10k
3.3V
R1061 100
R1059 1k
RMT
KEY2
KEY1
H-TRAPEZOID CONTROL
TILT CORR.
IC4904
V.SENCE1
OUT1
-V.1
+V.1
VEE
+V.2
-V.2
OUT2
V.SENCE2
VCC
IC4905
FT1
FT2
IN1
LOUD1
IN2
LOUD2
CHIP
FILTER
GND
FB22
FB21
FB11
FB12
OUT2
OUT1
VCC
SCL
SDA
C4913 16V 10
NP
R4938 100
C4914 16V 10
R4939 100
C4915 16V 22
C4921 16V 47
C4920 0.1
9V
R4946 56k 1%
VREF
R4947 2k 1%
C4922 0.1
R4949 1k
R4948 8.2k
R4937 JW
C4924 25V 47
C4923 25V 47
Eo
R4953 390 1/2W
C4925 0.1
R4950 390 1/2W
R4952 0.68 1/2W
R4951 0.47 1/2W
-15V
+15V
R4934 15k
R4935 15k
Ein
C4917 16V 22
R4936 10k
R5013 1 1/2W
5.5V
4.5V
MIX
R4942 100
R4943 100
R4932 4.7k
R4930 10k
Q4901
C4916 16V 22
R4933 4.7k
R4931 6.8k 5%
VSAW
4.5V
3.5V
2V
1V
JS015
JS016
RT1
TILT COIL
DY
G40
D40
-15V
GND
+15V
NC(/TILT)
GND
NC(/SCL2)
GND
NC(/SDA2)
GND
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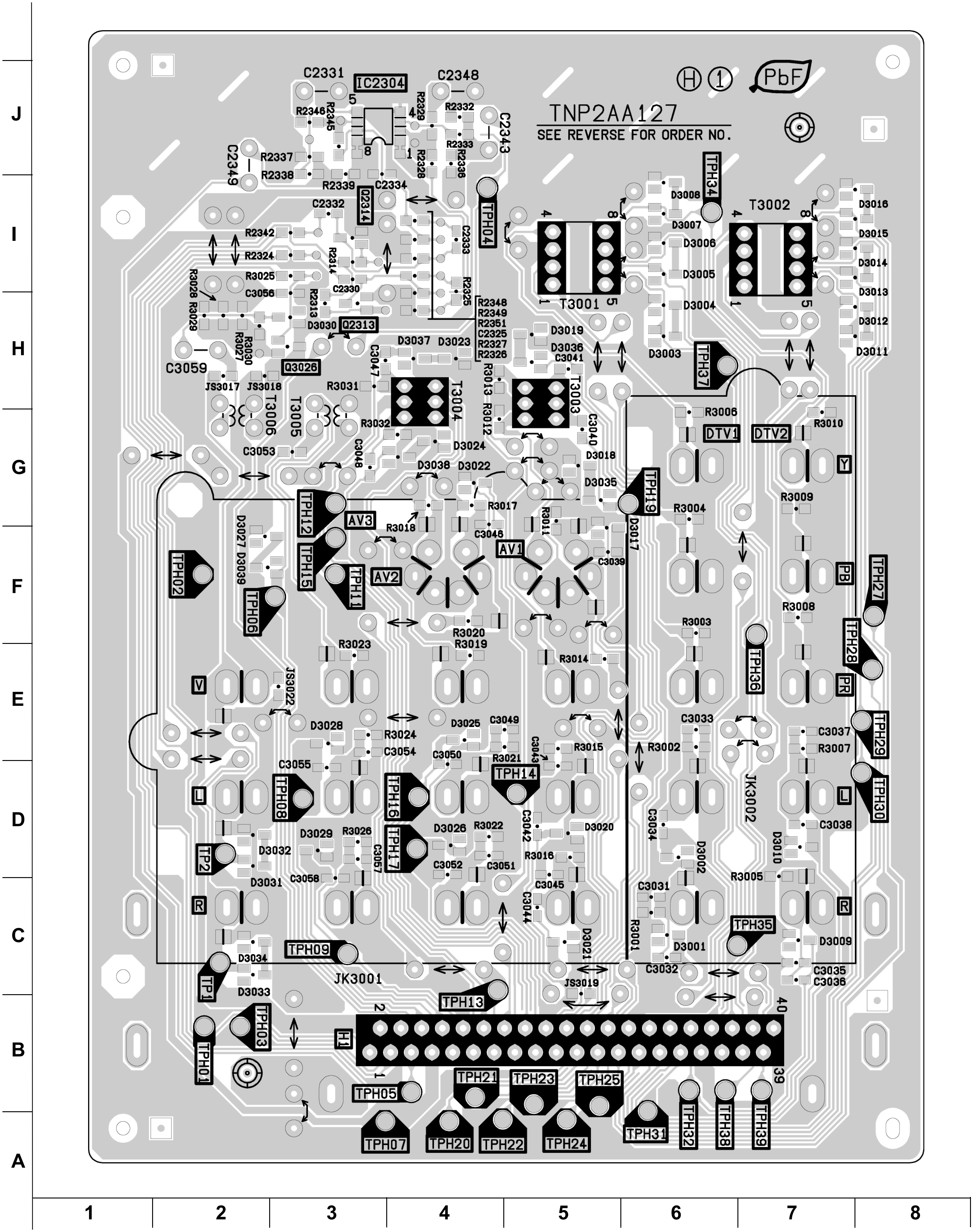
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C2331
IC2304
C2348
R2346
R2345
R2329
R2332
C2343
R2333
R2328
R2336
C2349
R2337
R2338
R2339
C2334
C2332
Q2314
TPH04
TNP2AA127
SEE REVERSE FOR ORDER NO.
PbF
TPH34
D3008
D3007
D3006
D3005
D3004
D3003
T3001
T3002
D3016
D3015
D3014
D3013
D3012
D3011
R2342
R2324
R2314
C2333
R3025
C3056
C2330
R2313
R2325
R3028
R3029
R3027
R3030
D3030
Q2313
R2348
R2349
R2351
C2325
R2327
R2326
C3059
Q3026
D3037
D3023
C3047
D3019
D3036
C3041
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JS3017
JS3018
T3006
T3005
R3031
T3004
R3013
R3012
T3003
R3006
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DTV2
R3010
R3032
C3040
C3053
C3048
D3024
D3018
D3038
D3022
D3035
TPH19
Y
TPH12
AV3
R3017
R3018
C3046
R3011
D3017
R3004
R3009
D3027
D3039
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AV1
C3039
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TPH11
AV2
PB
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R3020
R3019
R3003
R3008
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R3014
TPH36
V
JS3022
PR
D3028
R3024
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D3025
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C3043
R3015
R3002
C3033
C3037
R3007
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C3055
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R3021
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JK3002
L
TPH08
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C3042
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R3026
C3057
D3026
R3022
D3020
C3034
D3002
D3010
C3038
TP2
D3032
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R3016
C3052
C3051
C3058
D3031
C3045
C3044
R3005
C3031
R
R3001
D3021
D3001
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D3009
TPH09
D3034
JK3001
C3032
C3035
C3036
TP1
JS3019
D3033
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TPH03
2
40
H1
TPH01
1
39
TPH05
TPH21
TPH23
TPH25
TPH07
TPH20
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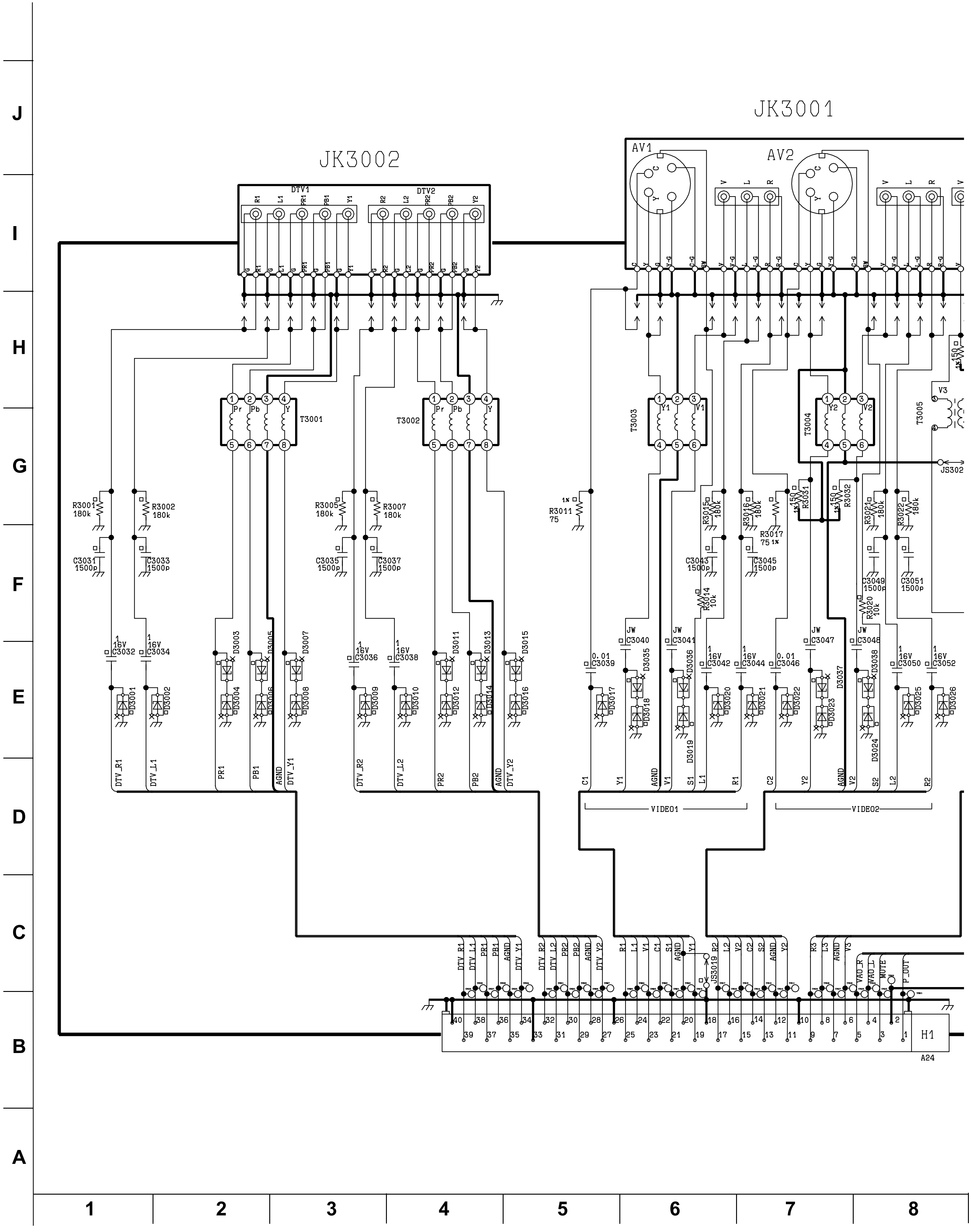
TPH32
TPH38
TPH39

H-BOARD TNP2AA127 CT-36HL43G/UG, CT-32HL43G/UG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DTV1
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R1
L1
PR1
PB1
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R2
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PR2
PB2
Y2
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AV1
AV2
T3001
T3002
T3003
T3004
T3005
V3
JS302
R3001 180k
R3002 180k
R3005 180k
R3007 180k
R3011 75
R3014 10k
R3015 180k
R3016 180k
R3017 75
R3020 10k
R3021 180k
R3022 180k
R3031 150
R3032 150
C3031 1500p
C3033 1500p
C3035 1500p
C3037 1500p
C3043 1500p
C3045 1500p
C3049 1500p
C3051 1500p
C3032 1 16V
C3034 1 16V
C3036 1 16V
C3038 1 16V
C3039 0.01
C3040 JW
C3041 JW
C3042 1 16V
C3044 1 16V
C3046 0.01
C3047 JW
C3048 JW
C3050 1 16V
C3052 1 16V
D3001
D3002
D3003
D3004
D3005
D3006
D3007
D3008
D3009
D3010
D3011
D3012
D3013
D3014
D3015
D3016
D3017
D3018
D3019
D3020
D3021
D3022
D3023
D3024
D3025
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PR1
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V1
S1
L1
R1
C2
Y2
AGND
V2
S2
L2
R2
VIDEO1
VIDEO2
R3
L3
AGND
V3
VAO_R
VAO_L
MUTE
P_OUT
JS3019
H1
A24
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G
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D
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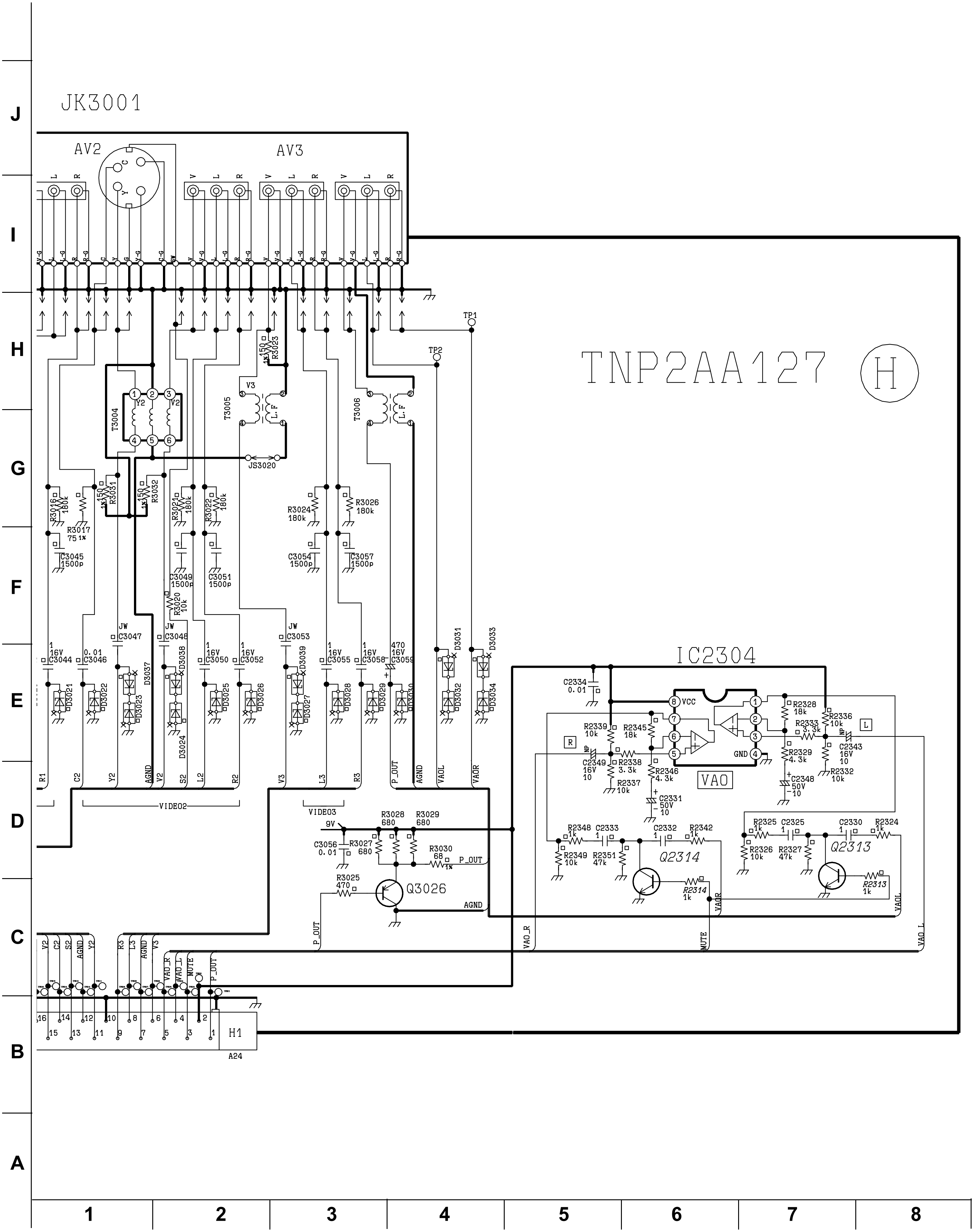
JK3001
AV2
AV3
TNP2AA127
H
TP1
TP2
T3004
T3005
T3006
V3
L.F
Y2
V2
JS3020
R3016 180k
R3017 75 1%
R3031 150 1%
R3032 150 1%
R3021 180k
R3022 180k
R3020 10k
R3023 150 1%
R3024 180k
R3026 180k
C3045 1500p
C3049 1500p
C3051 1500p
C3054 1500p
C3057 1500p
C3044 1 16V
C3046 0.01
C3047 JW
C3048 JW
C3050 1 16V
C3052 1 16V
C3053 JW
C3055 1 16V
C3058 1 16V
C3059 470 16V
D3021
D3022
D3023
D3037
D3024
D3038
D3025
D3026
D3027
D3039
D3028
D3029
D3030
D3031
D3032
D3033
D3034
R1
C2
Y2
AGND
V2
S2
L2
R2
VIDEO2
V3
L3
R3
VIDEO3
P_OUT
AGND
VAOL
VAOR
IC2304
C2334 0.01
VCC
GND
VAO
R
L
R2339 10k
R2345 18k
R2338 3.3k
R2337 10k
R2346 4.3k
C2349 16V 10 NP
C2331 50V 10
R2328 18k
R2333 3.3k
R2336 10k
R2329 4.3k
R2332 10k
C2343 16V 10 NP
C2348 50V 10
9V
C3056 0.01
R3027 680
R3028 680
R3029 680
R3030 68 1%
R3025 470
Q3026
P_OUT
AGND
R2348 1k
C2333 1
C2332 1
R2342 1k
R2349 10k
R2351 47k
Q2314
R2314 1k
R2325 1k
C2325 1
C2330 1
R2324 1k
R2326 10k
R2327 47k
Q2313
R2313 1k
VAOR
VAOL
VAO_R
VAO_L
MUTE
V2
C2
S2
AGND
Y2
R3
L3
AGND
V3
VAO_R
VAO_L
MUTE
P_OUT
H1
A24
J
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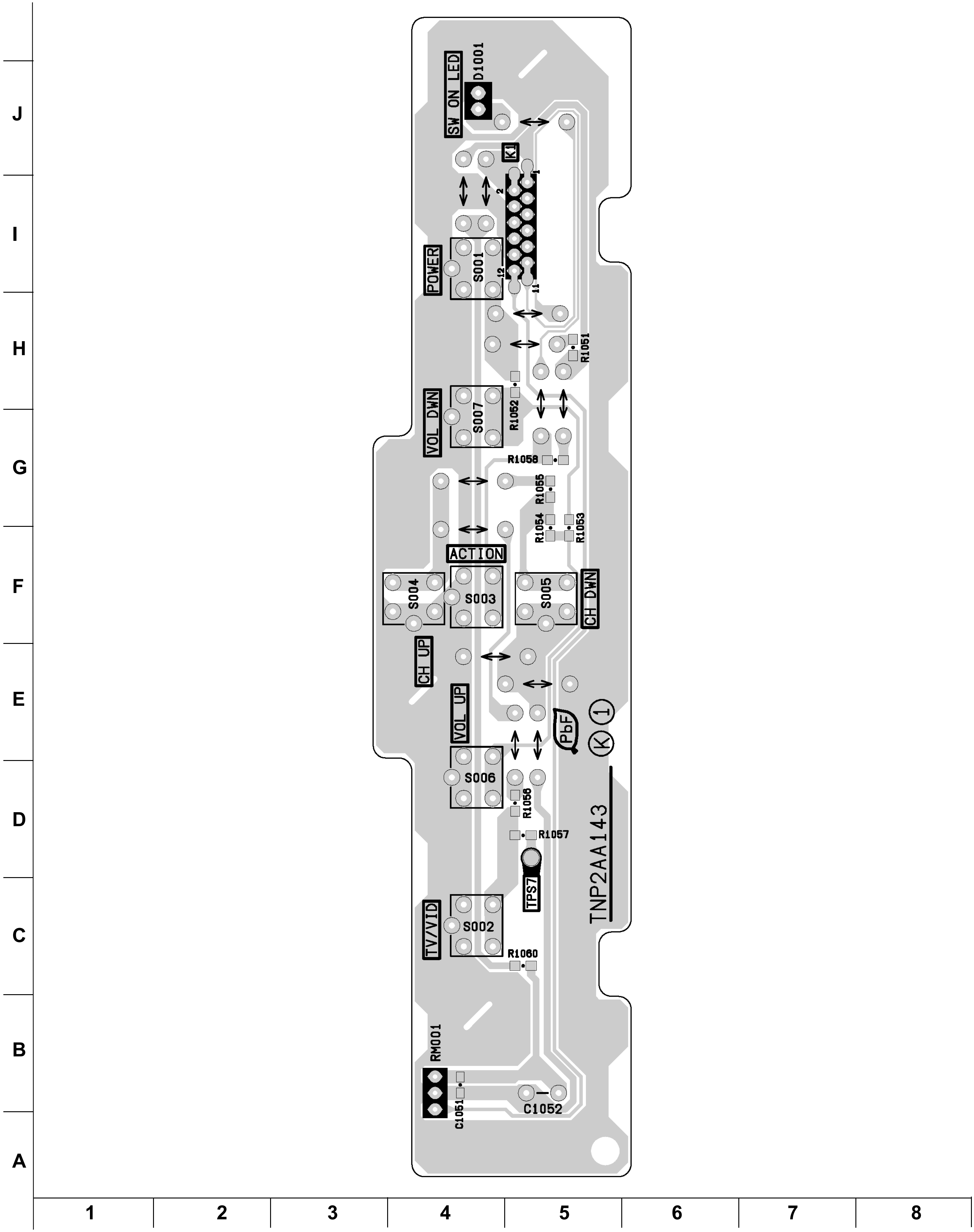
J
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D
C
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A
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3
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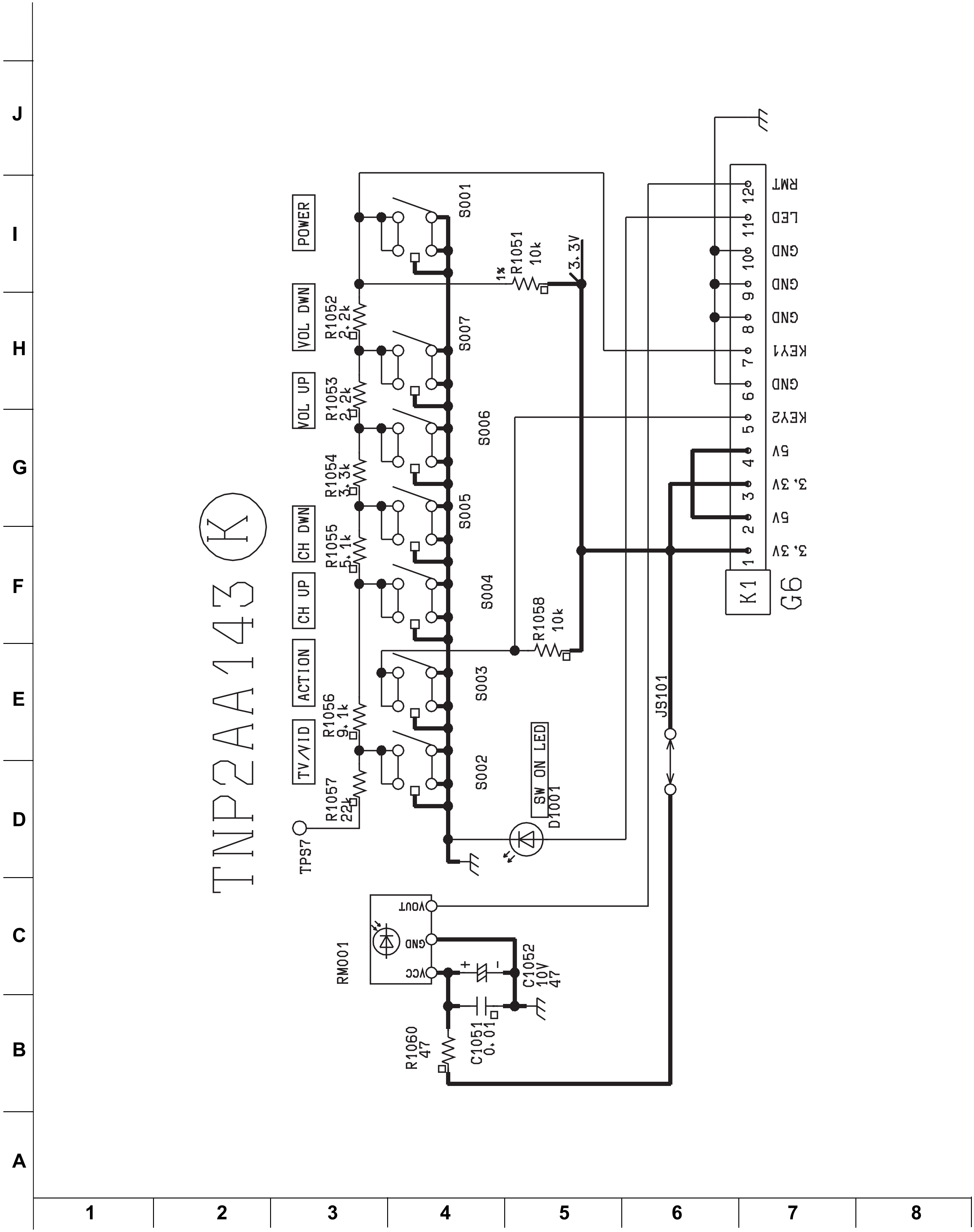
6
7
8
SW ON LED
D1001
K1
2
1
12
11
POWER
S001
R1051
VOL DWN
S007
R1052
R1058
R1055
R1054
R1053
ACTION
S004
S003
S005
CH DWN
CH UP
VOL UP
PbF
K
1
S006
R1056
R1057
TNP2AA143
TPS7
TV/VID
S002
R1060
RM001
C1051
C1052

K-BOARD TNP2AA143 CT-36HL43G/UG, CT-32HL43G/UG


TNP2AA143 K
POWER
VOL DWN
VOL UP
CH DWN
CH UP
ACTION
TV/VID
S001
S007
S006
S005
S004
S003
S002
R1051 10k 1%
R1052 2.2k
R1053 2.2k
R1054 3.3k
R1055 5.1k
R1056 9.1k
R1057 22k
R1058 10k
3.3V
TPS7
SW ON LED
D1001
JS101
RM001
VOUT
GND
VCC
C1052 10V 47
C1051 0.01
R1060 47
K1
G6
1 3.3V
2 5V
3 3.3V
4 5V
5 KEY2
6 GND
7 KEY1
8 GND
9 GND
10 GND
11 LED
12 RMT
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8